

An Exploration Into Doctoral Students' Sense of Community and its Influence on  
the Formation of Informal Mentoring Relationships

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## Abstract

This exploratory mixed method research project was designed to investigate an area of doctoral education that has received little attention in the past. This research focused specifically on the non-intellectual, hoped-for by-products of doctoral education; the dynamic processes of developing and maintaining both a sense of community and informal mentoring relationships. The design of the study captured the experiences of doctoral students and alumni at various time periods in the doctoral program. Participants represented a diverse group of students with differences in professional and academic backgrounds and life stages. A pilot study for this research suggested that the presence of a sense of community and informal mentoring may provide the necessary relationships to support this diversity. The primary question at the forefront of this study was: Do doctoral students feel connected to one another? Five subquestions were developed to address this research topic: Does a sense of community already exist and flourish in doctoral education? Are the programs and resources of the doctoral program organized to nurture the creation and maintenance of a sense of community? Is a sense of community a foundational element in the formation of naturally occurring relationships among doctoral students? What educational and socio-emotional benefits are associated with informal mentoring relationships during the doctoral experience? and Do doctoral students perceive a change in their development as stewards of their discipline over time? The principal methods used to investigate these research questions combined both quantitative and qualitative techniques in a concurrent time sequence. The quantitative portion of the study involved a questionnaire, while the qualitative

portion involved two approaches; face-to-face interviews and an open-ended question at the end of the questionnaire. Findings from the study indicated that the presence of both sense of community and informal mentoring enhance the overall quality of doctoral education. Program elements that enhanced or hindered connection between students were identified. Both the dynamics and the emotional, social, and academic benefits of informal mentoring were elucidated. Over time participants perceived changes in their development of the qualities associated with stewardship. This study brought the “hoped-for by-products” associated with doctoral education from the background shadows to an illuminated position at the forefront of inquiry.

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## CHAPTER ONE: INTRODUCTION TO THE STUDY

As midsized universities in Canada sit poised on the threshold of becoming “comprehensive” universities, it is timely to pause and reflect on existing programs that contribute to the achievement of this status.

This exploratory study paints a portrait of the experiences of doctoral students in a midsized university in Ontario. Specifically it explores two aspects of doctoral education that have received little attention from educational researchers: (a) the creation and maintenance of a “sense of community” among students and (b) the subsequent impact of “sense of community” on the formation of informal mentoring relationships.

This portrait of experiences is painted on a worn canvas expanding on a sketch of Vygotsky’s (1931, as cited in Crain, 2000) theory of social-historical constructivism. At times one may observe the old sketch visible through the painting, blending existing educational theory with new findings. Each brushstroke reflects a unique perspective as participants reflect on their educational journey. My palette board blends the complementary colours of both qualitative and quantitative methods significantly increasing our understanding of the doctoral student experience. The frame to complete the portrait is in readiness; waiting to support and enclose the canvas. Wooden pieces used to construct the frame were cut from planks of the following conceptual concepts: (a) creating a sense of community; (b) the value of relational education in terms of informal mentoring; (c) supporting age, life stage and professional diversities; and (d) social and emotional learning. In a gallery hung with portraits depicting educational research, this painting hangs beside few others of its

type. One must view the painting from a distance and from all angles since images that appear vague initially made using broad brushstrokes are brought into sharpness by the details of experiences offered by doctoral students. Clarity reveals the dynamics at work as connections are made among students in a natural fashion, leading to the formation of informal mentoring relationships.

### Background of the Problem

Racial and ethnic diversity are the focus of much of the literature pertaining to diversity in higher education. Other well published areas addressing the topic of diversity include students with disabilities and students associated with working class backgrounds (Gundry & Rousseau, 1994). There is, however, another type of diversity in higher education that warrants the attention of educational researchers. This latter diversity is somewhat translucent and arises from vast differences in academic and professional backgrounds and life stages of students enrolled in the same program.

My interest in supporting academic background and life stage diversity stems from my experiences teaching laboratories in the undergraduate program at an Ontario university. It is not unusual for a single laboratory section to include students with the following diverse academic backgrounds: (a) undergraduate degree students entering university directly from high school (traditional students), (b) transfer undergraduate students from other universities, (c) post-degree students, (d) industrial professionals, and (e) exchange students from Italy or France, and (f) mature students seeking career changes. Students in these classes also represent a wide range of life stages and professional backgrounds.

Within my first few years of teaching in this program it became apparent that I could not be the sole individual helping to scaffold and fill in the various academic holes within such a diverse student body. Each individual student was going to have to identify what he or she needed to learn to be successful in the program and be willing to turn to each other, in addition to myself, to facilitate that learning. In such an arduous curriculum however, the pressing question became: How were the students going to have time to connect with each other and get to know one another well enough to offer each other help?

As I pondered this dilemma, I began to consider that if I could create a time and place for this connection to occur, the students might do the rest. In the fall of 2004 I began to facilitate a student society within the program, entitled the Society of Good Cheer (SOGC). This society is open to all alumni, graduate, degree, certificate and qualifying wine science students. The main objectives of the society include: (a) to provide directed educational wine tastings, (b) to act as a forum for sharing knowledge on all aspects of wine science, (c) to host invited speakers, and (d) to generate a physical place and a climate where informal mentoring relationships could naturally form between students. Creating an environment and an opportunity to foster the process of informal mentoring has been found to enhance student learning (Albon & Pelliccione, 2005). The academic background diversity, as well as the life stage diversity of the students attending SOGC meetings, allow them to experience both sides of the informal mentoring relationship; sometimes acting as a mentor and sometimes as a mentee.

Over time my role within SOGC has diminished to one involving simple organizational and administrative tasks as the group has self-organized itself. My experience mirrors Wheatley's (2007) description of development within an organization; "[s]elf-organizing systems create structure and pathways, networks of communication, values and meaning, behaviours and norms. In essence they do for themselves most of what we believed we had to do for them" (p. 25). It has been and remains to be a unique experience as I stand back and watch this self-organizing process.

### *Pilot Study*

Two years after launching the SOGC, I began a heuristic research study to explore the impact of the "society" on the formation of informal mentoring relationships and whether or not these relationships fostered support for academic, professional, and life stage diversity in higher education.

Seven participants were selected for this study representing a wide range of diversity in life stage and academic background. Three male and 4 female students agreed to participate in a single in-depth face-to-face interview. The ages of the participants ranged from early 20s to late 50s and the educational background of the participants ranged from a high school background to certification as a chemical engineer. Four of the participants were registered as degree students, 2 as certificate students and 1 as a graduate student.

The data generated from this research project supported the premise that when students are provided with an opportunity to connect in an out-of-class setting, a sense of community will develop. A web of relationships form that foster a

mentoring mosaic, which in turn will support diversity in both the intellectual and non-intellectual dimensions of higher education. Both community development and informal mentoring are processes that grow and change with time. Data suggested that students develop skills and attitudes, practice behaviours and gain knowledge during these processes in four main areas: (a) connecting, (b) dialogue, (c) informal mentoring relationships, and (d) contribution to supporting and enhancing a mentoring web.

From the perspective of the research participants, SOGC meetings provide the time and place for connection to occur. By practicing being collegial with past and present students, participants felt they became part of a group and came to realize that these connections could sustain them. Over time they felt themselves become more open and receptive to others. The key self-realized element of this theme was the knowledge that connecting to others is an important part of education.

The value of dialogue was the strongest theme in the data. Participants stated that the practice of dialoguing allowed them to gain the skills of patience, tolerance, and understanding. Additionally, they learned how to listen to what others had to say and only integrated what they heard into their personal knowledge base if they felt the information was useful. SOGC was described as a venue where participants felt safe to ask questions and test out ideas. Many of the participants felt that they needed more practice being social, and viewed this as a valuable opportunity before entering the wine industry. Several participants described an increase in learning about how many different perspectives exist around some issues.

All of the participants could describe experiencing an informal mentoring relationships either as a mentor, mentee, or both. The existence of SOGC was mentioned by all of the participants as an important element is the formation of these relationships. Words such as “indispensable” and “worthwhile” were used to describe how these relationships helped participants to succeed academically in the program and also with non-academic issues occurring in their lives. For those mentoring others a tremendous feeling of personal satisfaction was reported. These informal relationships were described as instrumental in developing a new or renewed sense of empathy for others. Often participants described that these informal mentoring relationships developed without intent and that they didn’t even realize they were forming.

Seeing themselves in a new light, participants felt they contributed to the practice of supporting and enhancing a mentoring environment. A “mentoring web” was described as the number of mentoring relationships naturally increased for each participant. This concept is similar to the “relationship constellation” described by Kram (1988). Feelings of recognition, inspiration, challenge, support, and motivation were described regarding the context created by the mentoring web. Skills associated with self-esteem, self-knowledge, and independent learning were highlighted as benefits from the creation of a mentoring web.

In essence what I was trying to achieve through the initiation and development of the SOGC was the formation of a learning community. At the heart of learning communities lies the philosophy of John Dewey. His work “rested on the central observation that students are highly variable individuals and that creators of

successful learning environments respect and build on this individuality” (Smith B. L., MacGregor, J., Matthews, R. S. & Bebelnick, F., 2004, p. 106). The learning community model of learning integrates both academic work and experiences that happen outside of the classroom. It fosters active learning over passive learning, cooperation over the competitive nature of current courses, and most importantly, community over isolation (Smith et al., 2004). There are five core practices described by the authors that are central to the design of a learning community: (a) community, (b) integration, (c) active learning, (d) diversity, and (e) reflection and assessment (p. 22).

This heuristic research study demonstrated that for a small group of undergraduate wine science students experiencing a sense of community was a foundational stage in the formation of informal mentoring relationships among those students.

### *Intriguing Parallels*

As data began to emerge from the pilot study, I wondered if similar experiences might occur within different groups of students, where academic, professional, and life stage diversity existed. Frequently shared stories with a doctoral student provided me with a glimpse of another diverse group of students. Numerous parallels became evident between students who participated in the pilot study and doctoral students. Both groups are provided with the opportunity to meet and connect on a social level; students during SOGC meetings and doctoral students during two residential phases of their program. Diversity in life stage, professional experience, and academic background exists for both groups. Lastly, a parallel exists

for the intensity of students' focus on a specific academic outcomes; OEVI students are extremely focused on the very specific area of wine science while PhD students are focused on completion of the requirements of their program. These intriguing parallels provided the root of the idea to focus this current study on doctoral students in higher education.

### Statement of the Situation

Considering the fact that doctoral education is at the pinnacle of the higher educational system, one would expect a wealth of literature to be focused in this area. The reality as pointed out by Golde and Dore (2004) is that the education of doctoral students attracts little attention when compared to the attention given to elementary, secondary, and undergraduate education. "The training of the mind is a subtle and complex affair, and one would expect a large body of research and literature to exist in which the intellectual and non-intellectual factors favoring the development of the mind are explored. Hardly anything of the sort exists" (Katz & Hartnett, 1976, p. 3). Current educational literature in this area is scant.

Researchers dealing with doctoral education have focused on issues such as time to completion and career preparation (Golde & Dore, 2004). While these issues inarguably are important, the non-intellectual factors favouring the socio-emotional development of doctoral candidates must also be considered, as proposed in this study.

The non-intellectual aspects of doctoral education have been neglected by researchers. Seymour (2004) states that "...while social values are acknowledged as important in education, social and emotional learning are rarely pursued as



educational ends in themselves, more often, they are only hoped-for by-products of defined “academic” purposes of education (p. 4). The field of informal mentoring is also lacking research attention, as “few studies of informal cohort mentoring in education have been published” (Mullen, 2003, p. 415).

If one enters the phrase “sense of community” into a computer search engine, the result will be a generated list of articles pertaining to a sense of community in distance education. There is an underlying assumption that if education occurs face-to-face, a sense of community will develop automatically. I beg to differ with this assumption and contend that it is an area that needs to be better understood and studied.

Informal mentoring differs from formal or traditional mentoring in several key areas. A one-to-one, unidirectional relationship between mentor and protégé is typical of formal mentoring. Often a third party is involved in setting up or directing the relationship. The mentor in a formal relationship is usually a person who is older, has more experience, and has achieved a higher position within a hierarchy. In contrast, informal mentorship “is spontaneous and supported through the mentor, consequently, these relationships are not managed, structured, or officially recognized” (Mullen, 2003, p. 415). Informal mentoring relationships also tend to involve greater interpersonal contact than formal mentoring relationships, typically last for a longer duration of time, and are generally power neutral (Mullen, 2003).

This research project proposes to focus on non-intellective “hoped-for by-products” (Miller, 1991) impacting doctoral education; specifically the development

and maintenance of both a sense of community and informal mentoring relationships. This area of focus has received little research attention in the past.

### Purpose of the Study

Students pursuing doctoral education are a diverse group of people. Of particular interest for this study are the diversities surrounding various students' life stages, academic and professional backgrounds.

The primary purpose of this study is to explore a "sense of community" from the perspective of current and alumni doctoral students. I hope to illuminate the following elements of a "sense of community": (a) its nature, (b) strategies for its creation, (c) its importance in doctoral education, and (d) its influence on the formation of informal mentoring relationships among students. A related area of inquiry will be to explore the impact that formation of multiple mentoring relationships or "mentoring mosaics" has on the doctoral educational experience.

### Questions to be Answered

The proposed study described the community of scholars in a doctoral program. I sought to answer the primary question driving this study: Do doctoral students feel connected to one another?

Specifically, this study addressed the following five subsections of the research topic:

- (a) Does a "sense of community" already exist and flourish in doctoral education?
- (b) Are the programs and resources of the doctoral program organized to nurture the creation and maintenance of a "sense of community"?

- (c) Is a “sense of community” a foundational element in the formation of naturally occurring relationships among doctoral students?
- (d) What educational and socio-emotional benefits are associated with informal mentoring relationships during the doctoral experience?
- (e) Do doctoral students perceive a change in their development as stewards of their discipline over time?

### Significance of the Study

This study could prove to be significant by: (a) providing participants with an opportunity to reflect on their educational and personal journeys; (b) adding to the educational literature in the fields of doctoral education, informal mentoring, and relational education, and academic communities; and (c) providing program committees with insights into doctoral students’ experiences.

Those doctoral students who participated in this study had the opportunity to reflect on their past and present experiences as a member of a diverse group of doctoral students. Their involvement provided a unique opportunity to share their experiences of connection within doctoral education.

A questionnaire was developed as a survey instrument for the quantitative phase of this study. Once completed the questionnaire was reviewed in a pilot study. The participants in the pilot study were chosen to be as similar to the research participants as possible. Six doctoral students; four from Biology and two from Biotechnology agreed to complete the survey and subsequently meet with me individually to discuss various aspects of the instrument. A detailed description of the questions asked and the results of this pilot study are discussed in Chapter 3.

During discussion with doctoral students who volunteered to pilot the questionnaire for this study, I was surprised by reactions to the last section on the questionnaire, Development as a Steward of a Discipline. The participants were given the following definition for the concept of being a steward of a discipline: “someone who will creatively generate new knowledge, critically conserve valuable and useful ideas, and responsibly transform those understands through writing, teaching and application” (Golde, Walker, & Assoc., 2006, p. 5). Not one of six doctoral students had ever considered themselves to be stewards of their particular academic discipline of Biology or Biotechnology, and when introduced to the concept saw themselves in a new ambassadorial light. This preliminary notion of a research tool introducing new concepts to participants is possible and would prove to be significant in terms of participants’ personal development.

As an outcome of this study, our understanding of the doctoral educational experience may be furthered significantly. The import of this research is eloquently stated by Sarason (1974) when he claims that “the dilution or absence of the psychological sense of community is the most destructive dynamic in the lives of people in our society” (p.x). The results of this study may have implications for doctoral programming by painting a clearer portrait of the value of creating a “sense of community” and the formation of informal mentoring relationships experienced by current and alumni doctoral students.

#### Rationale for the Study

This research explores the perceptions of doctoral students at three points during their educational journey. I attempted to investigate if the students feel

connected to one another, if they experience a sense of community together, and the nature of any formed informal mentoring relationships.

This study is important for reasons that span three different levels of rationale: (a) personal, (b) professional, and (c) provincial.

On a personal level, my interest in this area of research stems from both a desire to explore the non-intellectual aspects of doctoral education and an innate affinity toward the caring and nurturing elements of relational education. Firstly, I am considering application into doctoral studies and pose the following questions of the program: Would I find that a sense of community already exists and flourishes at this level of graduate education? Is a sense of community a foundational element leading to the educational and socioemotional benefits of naturally forming relationships among doctoral students? This study will hopefully provide information that will help steer my decision for application.

The development of the intellectual mind is most often thought of as the main focus of higher education. In the current educational system little emphasis is placed on the development of the non-intellectual aspects, the “hoped-for by-products,” of a student’s learning (Miller, 1991). Consequently “most individuals in our culture reach their adulthood with a somewhat mature mental functioning but with poorly or irregularly developed somatic, vital, emotional, aesthetic, intuitive, and spiritual intelligences” (Gardner, 1993). The second personal reason for my interest in this study is that I am drawn to those translucent aspects of non-intellectual education. This branch of education is holistic in nature and deals with “informal and incidental

learning” (Marsick & Watkins, 2001), and views caring, reciprocal relationships as significant in terms of an educational goal (Noddings, 2002).

On a professional level, both the relationship of students to one another and their relationship to information have significant impact within my teaching environment. Results of this study may be transferable to my teaching practice and will enrich my personal knowledge and development as an educator. In addition to teaching undergraduate students, I am also in daily contact with many graduate students who work with me in the capacity of teaching assistants, offering various types of academic and non-academic support.

Since the journey of the doctoral student traverses a similar path across the province of Ontario, would it not be possible to paint a picture of the experiences of doctoral students simply by looking at other graduate programs? Tinto (1987) points out the uniqueness of each program when he states that “...despite the wealth of data which may be obtained from the experiences of other institutions, each institution must ascertain for itself the particular attributes of its own situation” (p. 202). The findings of this study will provide information that will be unique in promoting, maintaining, and/or improving doctoral education within the research site. With this information in hand the doctoral program will be able to ascertain if its program is organized in such a way as to yield the results that it considers desirable. On a provincial level this study may prove important because its results may prompt heightened dialogue with other graduate programs across the province.

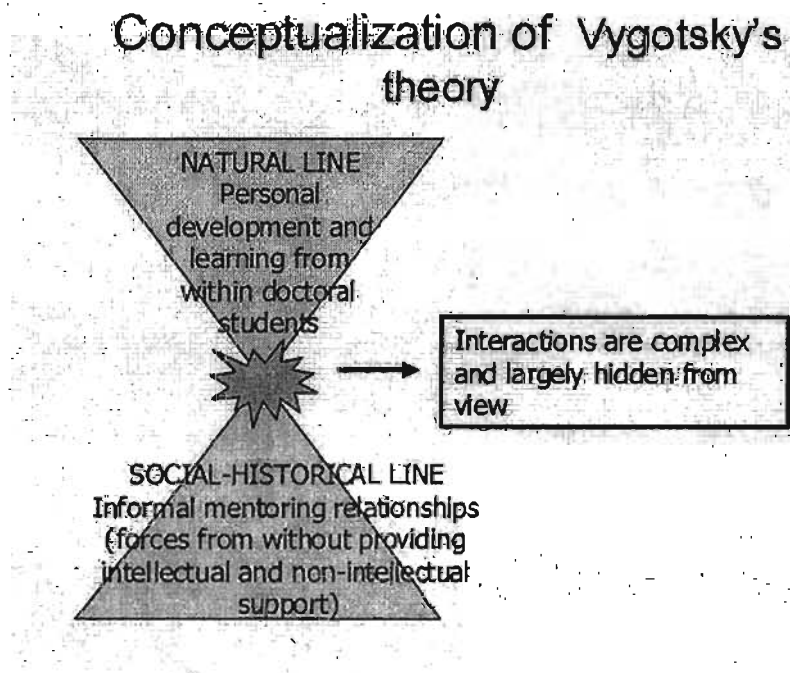
## Theoretical Orientation and Conceptual Framework

Having introduced the research topic, questions, and rationale driving this proposed study, I would like to establish both the theoretical orientation and conceptual framework within which this study is positioned.

### *Theoretical Orientation*

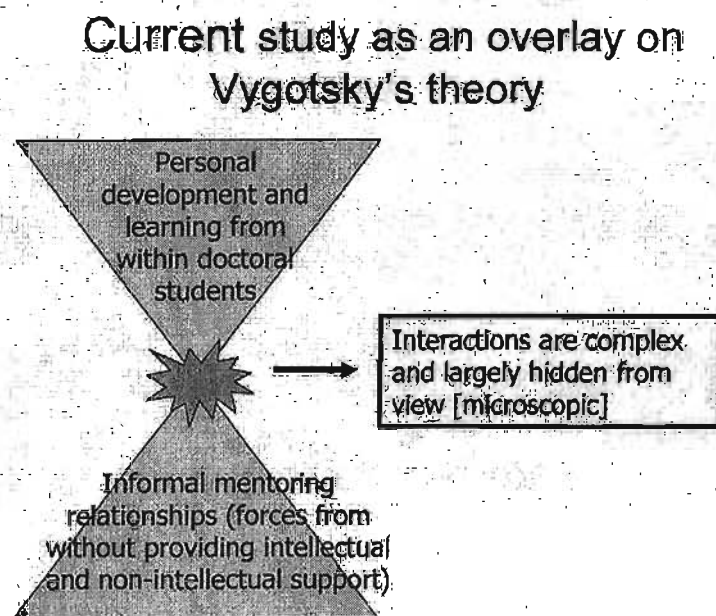
Eisenhart (1991) describes a theoretical framework as “a structure that guides research by relying on a formal theory...constructed by using an established, coherent explanation of certain phenomena and relationships” (p. 205). The Russian educational theorist whose theories underpin this proposed study is Lev S. Vygotsky. His work introduced the basic principle that “the contents of our thinking and the habits of our lives originate in our social interactions with others” (Lemke, 2002, p. 34). Vygotsky’s theory brings together two lines of development: a natural development of a learner from within and the social-historical influences surrounding the learner from without (see Figure 1). It is at the junction of these two forces that a form of cross-pollination occurs, leading to unique interactions.

Vygotsky identified these interactions as important areas of study and challenged and entreated educational researchers to “study how intrinsic development and cultural forces interact and produce new transformations” (Crain, 2000, p. 239). The current study superimposed upon the framework of Vygotsky’s theory can be visualized in Figure 2.



*Figure 1 . Diagrammatic conceptualization of Vygotsky's theory of the dual nature of learner development.*





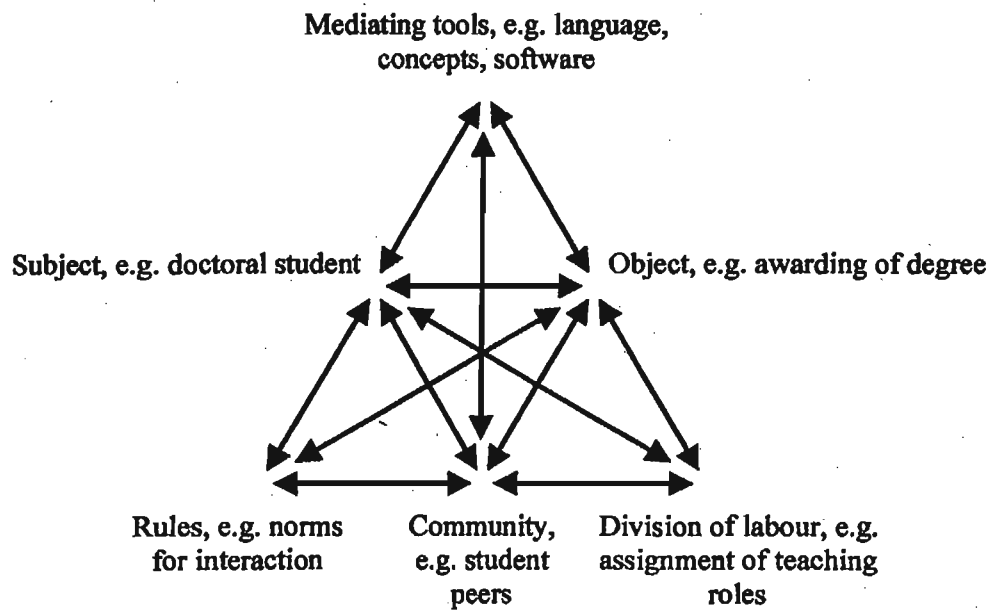
*Figure 2.* A schematic representation of theoretical orientation of current study.

My understanding of these two lines of development was broadened by the subsequent work of students and followers of Vygotsky who, building upon his work, developed what is known today as Cultural-Historical Activity Theory (Roth & Lee, 2007). Activity theory is one of many theories which has been utilized in an attempt to understand the landscape of doctoral education. Many theories aim to “address issues of relationships between individuals and their (structural, intellectual, social) environments – an issue that is at the heart of activity theory” (Hopwood & McAlpine, 2007, p. 1). Figure 3 illustrates an activity system Hopwood and McAlpine propose as a complex, interconnecting web, to be used as an aid in understanding:

relationships between (i) individuals, what they do and what motivates them, (ii) the communities and contexts in which they are embedded, including the rules and norms which regulate interactions, and the way different roles and tasks are assigned, and (iii) the tools people use to help achieve their objectives (p. 3)

This activity system is one of the key components in the development of my understanding of the interconnecting links between the student and the complex system of doctoral education. The relationship between a doctoral student (subject) and student peers (community) is the site of this research project.

Dependent on the motivating object of the activity system, a student will be involved in more than one activity system simultaneously, often overlapping (Hopwood & McAlpine, 2007).



*Figure 3.* Hopwood & McAlpine's (2007) activity system (after Engestrom, 1999) as a theoretical framework for understanding doctoral education [cited with author's permission].

Another important theoretical concept that helped to clarify my understanding of the doctoral student in the context of doctoral education was a metaphor presented by Roth and Lee (2007). Their metaphor was created to demonstrate the dialectical nature of an individual component of a system. The authors explain that to say a relation is dialectical is like saying “that any part that one might heuristically isolate within a unit presupposes all other parts; a unit can be analyzed in terms of component parts, but none of these parts can be understood or theorized apart from the others that contribute to defining it” (p. 196). Roth and Lee presented three microphotographs, each at increasing magnification, of a thread, strand, and fiber. The thread represents society in the metaphor, which I have likened to doctoral education. Increasing the magnification, individual strands in the thread become evident, each strand representing a single community, which for the purpose of this study represents a doctoral program. An additional magnification reveals individual fibers representing individual doctoral students. On the dialectic nature of a component within an arrangement in a non-linear, complex system, the authors explain that “the specific function of individual components cannot be understood decoupled from the function of other parts and the function of the whole” (p. 196). This thread-strand-fiber metaphor provides a contextural framework for this study.

### *Conceptual Framework*

A conceptual framework has been described to be “like scaffoldings of wooden planks that take the form of arguments about what is relevant to study and why” (Eisenhart, 1991, pp. 210-211). As the framework of a house under construction acts to support and enclose the house, the conceptual framework of a

research study functions in the same manner. The “planks” can represent previous research, ideas, concepts, perspectives, literature, different theories, and/or practitioner knowledge (Eisenhart, 1991). The conceptual framework supporting and enclosing this current study include: (a) the SOGC pilot study discussed earlier, (b) relational education in terms of informal mentoring, (c) social and emotional learning, (d) supporting diversity, and (e) creating a “sense of community.” These concepts will be discussed at length in the next chapter.

### Scope and Limitations of the Study

The scope of this study is delimited to past and present doctoral students in a single doctoral program at an Ontario university. Results generated from this study are specific to this research population and should not be generalized beyond this population.

Discussed in the following sections are inherent conceptual and methodological limitations associated with this study, which cannot be controlled for and may impact the results of the study.

#### *Conceptual Limitations*

Findings from my pilot study in undergraduate education indicated that creating a sense of community was a cornerstone for the formation of informal mentoring relationships. This may not be similarly true for students in graduate education. I am aware of the caution necessary to avoid what Miles and Huberman (1994) describe as a confirmation bias, that is, a researcher focusing on testing the theory generated from a previous study instead of focusing on the generation of new theory.

This study looks at ways to support diversities of life stage and academic and professional experience. There may be other types of diversity within the participants' experiences that will impact their academic journey, but these may not be captured by this research design.

Lastly the categories and theories that I have chosen for inclusion in this study may simply not represent the understandings of the participants.

### *Methodological Limitations*

Methodological limitations associated with this study include: a) limitations in the design of the research, and b) limitations surrounding questionnaire and interview data.

*Research design.* This study depends upon doctoral students' willingness to volunteer their time to participate. The response rate in this study may not be as high as anticipated. There is also a possibility that participants would change their minds part-way through and decide to withdraw from the study.

A mixed method research design is limited by the fact that I must understand both qualitative and quantitative methods of research. My experience and skills involved in quantitative research and data management have developed over the past 6 years. I have been teaching laboratories where statistical analysis of data generated by students has been an integral part of the lab design. Additionally, I have been involved in many quantitative research studies contributing in terms of data analysis and technical expertise. A prior qualitative heuristic research study, alluded to earlier, provided a much needed opportunity for me to practice all aspects of the

qualitative research process. I feel confident that my knowledge and skill sets are robust enough to choose a mixed method research design for this study.

In addition, mixing methods is a relatively new type of research methodology and as such carries with it risks of misunderstanding and non-acceptance from an educational audience, the very group for whom this study is intended.

There is a possibility that mixed research might yield contradictory findings between the quantitative and qualitative phases of the study and that it might prove to be more expensive and time consuming than a mono-method approach.

*Questionnaire data.* Participants might not return a completed questionnaire, even after reminders have been sent. Questions may be missed when completing the questionnaire, or the participant may choose not to answer all of the survey items. It is hoped that those items answered would be accurate and honest responses. A low response rate would lower the confidence of the results.

Inherent in this research instrument are the limitations of: (a) not being able to physically observe participants' gestures and (b) the inability to further probe responses (Miles & Huberman, 1994).

*Interview data.* Since face-to-face interviews involve the physical meeting of two people, it is possible that the interview data might be biased because of an emotional or personal exchange between the interviewer and interviewee. On the other hand, this might not be a limitation for phone interviews. With both forms of interviewing being "self-serving responses" (Patton, 2002, p. 306) it might limit the collection of credible interview data. Participants responding in such a fashion tend to tell the interviewer what they think they want to hear.

### *Assumptions*

The following assumptions have been made with respect to this study:

- (a) Student and alumni records maintained by the Graduate Department are accurate and complete.
- (b) Doctoral candidates participating in this study will respond accurately during both the interview process and completion of the questionnaire.

### *Outline of Remainder of Document*

This thesis explores how the establishment of a sense of community in graduate education impacts the formation of informal mentoring relationships. In Chapter 2, I review the literature pertaining to the two major domains of the study; (a) “sense of community” in terms of its nature, creation strategies, and potential outcomes of its establishment and (b) informal mentoring relationships in terms of the mechanism that allows relationships to develop, mentoring mosaics, impact on academic experience, retention, and completion rates. In addition a review of the literature dealing with the concept of doctoral students as stewards of their discipline is provided.

In Chapter 3, a research design is presented along with an associated mixed method research methodology. The methods chosen for sampling procedures and the strategies and instrumentation of data collection, management, and analysis are explained. Ethical issues pertinent to this research study are discussed at the end of the chapter.

In Chapter 4, qualitative themes and concepts that emerged from the data and quantitative findings are presented in an integrative manner.



In Chapter 5, a summary of the impacts of the findings is presented.

Implications of the findings for and articulation with existing theoretical issues are discussed. Recommendations are offered, followed by conclusions for the study.

## CHAPTER TWO: LITERATURE REVIEW

This literature review is organized around the two major domains of the proposed study: (a) sense of community and (b) informal mentoring relationships in doctoral education. Neither of these concepts are precise, concrete entities which can be easily understood without introducing several subtopics. The subtopics are presented in each of the two major sections in an order that leads to a richer comprehension of these two concepts.

The chapter begins with an exploration into the concept of sense of community. The nature of this concept, its significance in doctoral education, and best practices for its creation and maintenance will be discussed. The second portion of the chapter presents an overview of informal mentoring, explores the concept of relational education, presents strategies for creating a mentoring environment, explores multiple informal mentoring relationships or mentoring mosaics, discusses outcomes of informal mentoring practices, and finally discusses the ancillary branch of this study, namely stewardship.

### The Nature of Sense of Community

The nature of a sense of community in doctoral education can best be understood by taking a closer look at: a) where it exists, b) who experiences it, c) how it can be defined, and d) elements which come together in its creation.

### *A Brief Overview of Academic Culture*

The culture of a school describes the behaviours, words, and interpreted events and actions of the members. Every school portrays complex cultural patterns of norms, language, values, rules and regulations, and beliefs that are used to

understand its world. It also prescribes how people within a culture should act.

Academic culture is defined “as members react to it, interpret, shape, and reinterpret the organization, its structure, processes and events...this interplay of individual idiosyncrasy and collective meaning express itself in patterns of norms, beliefs and values” (Rossman, Corbett, & Firestone, 1998, p. 5).

The culture of a university is composed of two parts: concrete observable qualities and less obvious translucent qualities, which are the most difficult to measure (Harris & Nettles, 1996). This study deals with the less apparent qualities of academic culture. Within this academic culture lies the relationship of interest for this study; the formation of a sense of community and its influence on the formation of informal mentoring relationships among doctoral students.

#### *Transition from Academic Culture to Academic Community*

“All schools may have cultures, but not all schools are communities” (Sergiovanni, 1992, p. 46). There are two aspects to a school community; its physical structure or formation and the psychological experiences of perception, feeling, attitude, and understanding of its members. It is the latter relational aspect of community that will be the focus of this study. This psychological “sense of community” was brought to the forefront of community psychology by Sarason’s seminal work in 1974. His hope was “that a group of very diverse persons could develop and maintain a psychological sense of community without sacrificing individuality...” (p. ix). One of life’s paradoxes is that people need both individual freedom and community at the same time. They need to have the freedom to self-create, while also fulfilling the need to be connected with others (Wheatley, 2007).

*Diversity in the Graduate Landscape*

Diversity was historically recognized in education as something that needed to be “melted away” so that newcomers or non traditional students would fit better into a standard system and thus American society (Ozmon & Graver, 2003, p. 188).

Schools were therefore viewed as instruments to melt away cultural differences. This begs the question: Where did this fear of differences arise? By refusing to recognize “otherness” in people we can live in an illusionary world, believing that we know the ultimate truth about both ourselves and the world (Palmer, 1998). Living in a universe where everyone is the same allows us to feel secure, whereas a feeling of fragility accompanies the realization that ours is not the only perspective, experience, or truth (Palmer, 1998).

More recently there has been an increased awareness that differences actually “add strength to the American society fabric and that such differences need to be preserved” (Ozmon & Graver, 2003, p. 188). In order to maintain the diversity present in our programming in graduate education, we need to acknowledge it and explore its translucent qualities. The presence of diversity prompts comparison, observation, and examination of “the way I do it” (Barth, 2004, p. 74). That learners are diverse in numerous ways is not a new insight, but “one that is often overlooked in teaching and learning environments” (Smith et al., 2004, p. 106). The acknowledgment and exploration of the nature of diversity in student populations is essential for its preservation.

Graduate education has seen increased growth over the last 30 years and as a result of this growth the present graduate student population portrays enormous

diversity (Isaac, Pruitt-Logan, & Upcraft, 1995). These diversities have resulted in a “highly individualized enterprise; no two students hav[ing] the same goals and experiences” (Golde & Dore, 2004, p. 38). Doctoral students differ in their: (a) registration status of full-time or part-time, (b) academic background, (c) past professional experience, (d) life stage, (e) goals, (f) age, and (g) gender. This diversity in academic background provides the group with a vast range of experiences, but also presents challenges to educators within the program. In my experience teaching in a diverse student landscape, I have learned not to make assumptions regarding the level of core knowledge of the students.

### *Defining the Concept*

McMillan and Chavis (1986), building on Sarason’s (1974) work created the following definition of the concept of “sense of community” that will be used for this study. A sense of community means “a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members’ needs will be met through their commitment to be together” (p. 4).

Fostering a sense of community is a central concern in the education of students of all ages. Parks (2000) sheds some light on the reason much of the focus in educational literature dealing with communities exists for child and adolescent age groups, but little exists for adult students. “[T]he notion of independence is so powerful in Western society and in the canons of adult psychology, if the need for family and community is strong, it may appear to contradict the achievement of adulthood” (p. 91). Regardless of life stage there exists within learners both a need for individual independence and a need for community.

### *Elements of Sense of Community*

McMillan and Chavis (1986) have proposed four elements that come together to create a sense of community: (a) membership, (b) influence, (c) integration and fulfillment of needs, and (d) shared emotional connection. Each of these elements will be explored in this study in the context of a community of doctoral students.

#### *Membership*

Lewis (1990) states that membership in a community provides its members with both emotional support and an emotional identity (as cited in Sergiovanni, 1992). "The more this virtue becomes established in a school, the more natural connections among people become ..." (Sergiovanni, 1992, p. 86). To achieve the desired state of emotional safety, a development of trust is essential, as only then will students feel a willingness to communicate what they really feel. Becoming a member of a community evokes a sense of belonging and identification with the whole group. A personal investment is made by the member towards the group (McMillan & Chavis, 1986).

*Life at the edge of an academic community.* Alred, Byram and Fleming (2003) have found that by forming groups individuals find a sense of security, which leads to the development of the "in" group and the "out" group. Experiences which lead to the questioning of established conventions and values, but not necessarily rejecting them lead to the author's concept of the "intercultural experience." To be intercultural means to acknowledge one is part of a culture, to explore how one is shaped by that culture and how others are shaped by their cultures. The culture of interest for this study is the academic culture of graduate school.

“The locus of interaction is not in the centripetal reinforcements of the identity of one group and its members by contrast to others, but rather in the centrifugal actions of each which creates a new center of interaction on the borders and frontiers which join rather than divide them” (p. 4). This intercultural experience is characterized by a creative or generative quality, as opposed to an experience that results in a defensive quality. Thinking interculturally minimizes the effect of the “in” and “out” group. Graduate students benefit from this intercultural experience, as they progress through their program. The generative perspective of the distance between the two segments of the culture allows for terms such as “barriers” (Malhotra, Sizoo & Chorvat, 2003) to be changed into “gateways”, and “prohibitions” into “invitations” (Alred, Byram & Fleming, 2003, p. 5).

This shift in perception of a boundary from a closed rigid barrier to an open flexible gateway is in accord with my experience within the SOGC. Wheatley (2007) takes this idea one step further likening a group or organization to a process similar to a living system, as opposed to a structure.

Rather than being a self-protective wall, boundaries become the place of meeting and exchange. We usually think of these edges as the means to define separateness, defining what’s inside and what’s outside. But in living systems, boundaries are something quite different. They are the place where new relationships take form, an important place of exchange and growth as an individual chooses to respond to another. (p. 48)

*Induction into academic community.* Induction into an academic community is not a readily understood process by those within or outside the community. It is a

difficult process to understand because “once membership...is achieved the processes and knowledge needed for entry become invisible to the members of the community” (Johnston, 1995, p. 287). To enter into an academic community with its gateways and invitations is to be involved in a process of transition.

In general a transition can be defined as an event or a non-event that changes a person’s assumptions, roles, routines, and relationships at home, in the community at large, and in the academy (Schlossberg, 1984). For each graduate student entering doctoral studies, his/her transitional experience(s) will differ. Some will experience life style transitions such as changes in: (a) financial position, (b) family dynamics, (c) living conditions and (d) social networks. Additionally, students may experience challenges to their sense of self, manifesting as: (a) feeling of self-doubt, (b) fear of failure and (c) lack of knowledge about the program (Bowman et al., 1990).

“[T]he transition process extends from the first moment one contemplates returning to school to the time when the experience is complete and integrated into one’s life” (Schlossberg, Lynch, & Chickering, 1989, p. 14). There are three parts to a transitional process that have been described in the literature: (a) moving into the academic environment, (b) proceeding through the program, and (c) preparing to leave (Schlossberg, Lynch, & Chickering).

When students first enter graduate school they go through a “cultural learning or enculturation process in which they learn to act as productive members of their graduate department (Boyle & Boice, 1998, p. 87). In certain fields it is often difficult to learn what characterizes a discipline. Education, for example, is a very diverse field in which students identify their own topics, often creating feelings of



uncertainty and insecurity (Johnston, 1995). Personal dispositional factors and situational factors may affect this process as discussed above. The practices and procedures of the department may “either facilitate or hinder the enculturation process” (Van Maanen & Schein, 1979, p. 87) for incoming students. Best practices to encourage successful enculturation for doctoral students will be discussed in a future section.

A closer look at the “moving in” phase reveals that students have common agendas and needs. A definition of an educational need that expresses the feelings of many adult students “is a gap or discrepancy between a present capability and a desired capability” (Poonwassie & Poonwassie, 2001, p. 101). The most pressing needs at this stage of the transition is the desire to: (a) become familiar with the culture of the school/department; the rules, regulations, norms, and expectations, and (b) learn how to be a graduate student.

The “moving through” stage has the added issue of students attempting to balance their studies with various other life commitments, whether they are family or work responsibilities. This stage is characterized by the doctoral student identifying her/his intellectual and professional interests, choosing a committee and preparing for comprehensive exams (Baird, 1995).

The final stage in the career of a graduate student has been identified as the dissertation stage. This final stage has associated with it unique tasks and demands, as do the beginning and middle stages discussed above. It is during this final stage that students need to feel supported and challenged in order for them to sustain their energy and enthusiasm (Schlossberg, Lynch, & Chickering, 1989).

There are gateways and invitations throughout the transitional processes. One of the relevant gateways for this study is the formation of informal mentoring relationships which will be discussed in the next major section of this chapter. It is the premise of this researcher that the informal mentoring gateway can be opened by the establishment of a sense of community.

### *Influence*

The second element of sense of community is that of influence. This process of influence is bidirectional in effect. Members of the community feel that “they matter and they make a difference to the group, while at the same time the group matters to its members” (McMillan & Chavis, 1986, p. 4). I observed this element of influence by various members of the SOGC as they offered to contribute to the group by presenting on areas of personal expertise. Student after student was made to feel like they had made a difference to the group through their contribution. Energy was put back into the group by its members’ experiences. People are naturally attracted to others whose skills or competence can in some way benefit them.

### *Integration and Fulfillment of Needs*

This element has also been described as “an acknowledged interdependence with others” (Sarason, 1974, p. 157). One of the benefits students identified from the pilot study was the knowledge that connecting to others reinforced a sense that their needs would be met. Their membership in SOGC provided a feeling that through the group the resources that they needed would be offered.

### *Shared Emotional Connection*

A shared emotional connection is an important element of a sense of community. It speaks to the “commitment and belief that members have shared and will share history, common places, time together, and similar experiences” (McMillan & Chavis, 1986, p. 4). With this shared emotional connection in place the community has a unique story to tell.

### *Significance of Sense of Community in Doctoral Education*

The doctoral students’ journey is rarely smooth sailing from start to finish. Social support, associated with sense of community, has been found to be significant in helping students overcome obstacles encountered on this journey.

### *Crossing Complex Terrain with Heavy Baggage*

The wording of this subtopic title is an excerpt from Miller and Brimicombe’s (2004) metaphor of the doctoral student as a traveler on a journey (p. 405). Contrary to the notion of independence prevalent in Western society, graduate students do need support on their educational journey. The authors describe the PhD journey “like foreign travel, involve[ing] the exploration of unknown territories and encounters with unfamiliar cultures. The experience is as much emotional as cognitive and aspects of the journey may be exhilarating, frightening, puzzling, stimulating, exhausting, or tedious” (p. 409). One type of support that has been found to be a very effective aid on this journey is social support. In this study the term social support will be used to convey those feelings of comfort, assistance, and/or information provided by other individuals (Wallston B. S., Alagna, S. W., DeVellis, B. M., & DeVellis, R. F., 1983).

Networks of social support have been found to be critical in the emotional and academic development of graduate students (Boyle & Boice, 1998; DeFour & Hirsch, 1990; Hodgson & Simoni, 1995; Mullen, 2003; Munir & Jackson, 1997).

Golde (1998) has outlined four tasks in the graduate journey associated with the initial socialization in graduate school as: (a) intellectual mastery, (b) learning about life as a graduate student, (c) learning about the discipline, and (d) integration into the department. During these initial stages of doctoral education it is important to focus on the development of community as a mechanism to enhance social support. Best practices in the creation of a sense of community will be discussed in a future section.

#### *A Glimpse at the Obstacles Within This Complex Terrain*

When the time available for graduate students to connect with each other is limited, it can lead to problems associated with isolation (Powles, as cited in Johnston, 1995). Academic isolation is one of the key factors associated with both increasing attrition rates of doctoral students and an increased time to completion of their degree (Golde, 2000; Lovitts, 2001). It has been suggested that 40%-50% of graduate students who begin a doctoral program will leave before finishing the program (Golde, 2000). Doctoral student attrition is not a well understood phenomenon and often the reasons students leave are not identified. Lovitts (2001) attributes the absence of community as a determining factor in students leaving their programs.

In response to a lack of community in graduate education at Purdue University, a Research Support Group was formed as a pilot study in 1999. The aim

of the group was to provide support and guidance to those students whose progress through the program was slowed or not moving forward (Wasburn, 2002). The proactive, encouraging nature of this group created a forum for connection to occur between students which facilitated the exchange of information, coaching, social support, and advice. Two years following its inception a positive effect could be seen on the completion rate of doctoral students.

Until universities create support networks within their schools and departments, it is not possible to determine with any degree of certainty whether those students who fail to complete their programs are ill prepared or whether the graduate school environment itself contributes to their lack of success. (p. 16)

Support networks, like the Research Support Group, contribute positively to the doctoral students' journey, making the complex terrain more easily navigated and the baggage a little lighter.

Based on both research and discussion the Canadian Association for Graduate Studies has outlined a number of recommendations for consideration by universities pertaining to educational approaches. Three of these recommendations are directly linked to my proposed study in that they deal with: (a) fostering social and academic relationships between students, (b) obtaining feedback from students regarding aspects of their program, and (c) contacting students who have graduated to include their perspectives of the program. The recommendations that are aligned with this study are as follows:

*Recommendation 5: Academic Participation*

Foster academic and social integration into research teams, scholarship discussion groups, teaching and other departmental affairs. This is especially important in areas of scholarship where graduate students have typically worked in relative academic isolation, engaged in solo scholarship.

*Recommendation 10: Evaluate Educational Support to Graduate Students*

Institute a system whereby graduate students evaluate their department's performance in terms of material and academic support. Identify successful practices in units that make noteworthy progress with regard to retention. Share these practices across the university in information sessions for graduate program directors and in educational workshops for students and supervisors.

*Recommendation 11: Exit Information*

Obtain feedback from exiting students, both those who graduate and those who leave before graduation. Use this feedback to adjust graduate programs and practices.

(Canadian Association for Graduate Studies, November 2004)

“[I]nstitutions and students would be better served if a concern for the education of students, their social and intellectual growth, were the guiding principle of institutional action (instead of retention being the ultimate goal). When that goal is achieved, enhanced student retention will naturally follow” (Tinto, 1987, p. 5). With the results from this study, I attempted to paint a portrait of both the academic and social connections that doctoral students make with each other during their educational journey.

Exhaustion or burnout is another obstacle that doctoral students often must navigate on their educational journey (Allen, McManus, & Russell, 1999). Social support can help to alleviate some of the negative effects of exhaustion. House (1981) describes four types of supportive behaviour that can be offered: (a) emotional; (b) affirmation or feedback; (c) informational or suggestions; and (d) instrumental, such as aid-in-kind or time.

#### Best Practices in Creating and Maintaining a Sense of Community

Building a strong doctoral student community cannot be accomplished through the implementation of a limited number of practices. The diversity of students in the program translates into many diverse needs and thus requires a diverse range of practices.

Boyle and Boice (1998) highlight any practice that fosters collegiality among first-year students as a best practice to facilitate the enculturation process. Because boundaries and transitions are perceived differently by students, “no single set of procedures will be uniformly successful for all students, therefore try as many as possible” (Johnston, 1995, p. 287). A diverse range of practices need to be integrated into the doctoral program in an attempt to meet the needs of the diverse nature of the students.

Orientation practices are those considered to be “any effort on the part of the institution to help entering students make the transition from their previous environment to the collegiate environment and enhance their success” (Upcraft & Farnsworth, 1984, p. 27). Doctoral students face many transitions as they embark upon their degree. They have been found to be “just as confused and anxious as they

were as new undergraduates” (Rosenblatt & Christensen, 1993, p. 502). The orientation process that doctoral students experience is dual in nature as they become socialized into both graduate studies and also into their particular academic discipline (Poock, 2002). Researchers have identified an environment that is welcoming as an important element to help to alleviate the stress and anxiety associated with beginning a new program (Baird, 1995; Golde, 2000).

Johnston (1995) outlines additional practices that contribute to the establishment and maintenance of a sense of community in doctoral education as: (a) publication of a newsletter, (b) providing incoming students with an information booklet, (c) having seminar programs available for students, (d) providing students with networking lists of students in the program along with their research topics, (e) encouraging students to participate in research conferences, (f) providing students with a physical place to meet and develop relationships, and (g) provide students with a broad range of formal and informal events with other students and faculty.

Resources and practices currently offered by the doctoral program under study, and whether students used or were encouraged to use these resources will be one of the foci of this study, as it pertains to the creation and maintenance of a sense of community in doctoral education.

When connections are made among people naturally they have entered into a relationship, often a learning relationship. The relationship of interest in this study is the informal mentoring relationship.



## An Overview of Informal Mentoring Relationships

Informal mentoring is considered to be a branch of mentoring called alternate mentoring and is referred to in the literature by many different names. This causes some confusion at first, as one is trying to determine if authors are all referring to the same form of alternative mentoring. For the purpose of this study an informal mentoring relationship is defined as “a mentor-protégé arrangement that is spontaneous and self-directed, not managed, structured, or officially recognized” (Mullen, 2005). A discussion of the differences between traditional and informal mentoring has been purposefully avoided because in my opinion both are valuable and these two forms of mentoring should act to enhance each other, not compete with one another. Chao, Walz, and Gardner (1991) share this view, stating, “[o]verall, there is little to be gained from debating the merits of formal versus informal mentoring since the two forms of mentoring appear to enhance one another. They are not and should not be considered mutually exclusive” (p. 36). Informal mentoring is the mentoring branch of interest for this study.

Informal mentoring is only possible through the formation of relationships. The relationships between graduate students are “among the closest and most intense of one’s entire professional life” (Cronon, 2006, p. 348). These relationships are not fully recognized for their importance in the development of graduate students. Turner and Thompson (1993) have stressed the importance of peer graduate relationships and contend that a successful socialization process is a critical element for a successful graduate career. This interaction of graduate students with one another has been

related to successful academic achievement and career development (Boyle & Boice, 1998).

Ruben (2004) interviewed a small group of students from a single discipline near the end of their first semester in their doctoral program and found that 65% of their most memorable experiences involved interpersonal relationships, as depicted in a pie chart (see Figure 4). Although this figure may not be representative of other disciplines or at different points in a doctoral program it does suggest the importance of relationships between doctoral students.

One of the key features of informal mentoring is that it usually occurs in groups. This group structure presents “a solution to isolation, abandonment of traditional arrangement and lack of community” (Mullen, 2005, p. 71). This feature permits exposure to various different people, thereby optimizing the potential for relationships to form.

### The Conceptual Framework of Relational Education

One of the dominant conceptual themes framing this study is the value of relational education. This theme is supported in educational literature and is also a perspective I hold personally. Wheatley and Kellner-Rogers (1996) claim that “relationships change us, reveal us, and evoke more from us...[o]nly when we join with others do our gifts become visible, even to ourselves” (p. 69). Pariser (2000) describes relational education as an approach that “puts a primary emphasis on creating an environment where all members of the [learning] community develop healthy, reciprocal relationships” (p. 35). The concept of informal mentoring relationships is situated within this field of relational education. The learning that

occurs between students is the mechanism by which informal mentoring works (Allen, McManus & Russell, 1999).

Relational education is an essential lens through which my teaching practice is coloured. This lens has proven useful professionally by helping me to recognize academic and life stage diversity and also in trying to support these diversities. I self-identify with Pariser's concept of a relational educator as "need[ing] to have faith that your support of students' emotional and intellectual functioning and your encouragement of their interests and aptitudes will do far more to prepare them for success than will their simply getting "through" the required curriculum" (2000, p. 41). In my experience, modeling holistic support of students acts as an example to encourage students to support each other.

One of the reasons why there is a need to focus on relational education is because changes in the landscape of society have led to changes in academic life. Ron Miller (as cited in Pariser, 2000) addresses this shift in landscape from a communal, relational model of education to one focused on the autonomous self below:

...for many thousands of years we have evolved into creatures who learn through community, through participation in things that matter to the people around us and in the last 100 or 200 years we have developed a culture that is technocratic and mechanical and reductionistic and we have lost the human connection between the learner and the community, between the learner and the natural world. (pp. 35-36)



*Figure 4.* Themes of most memorable experiences of graduate students (adapted from Ruben, 2004, p. 257).

The field of social learning is situated within the framework of relational education. It is this learning between students, or social learning, that is the mechanism by which mentoring works (Allen, McManus & Russell, 1999). Parker Palmer describes the learning that occurs when people meet in the following selection:

A meeting for learning is, in the first place, a genuine encounter between persons, a “meeting” in the literal sense. In conventional classrooms the focus is on the isolated self. The teacher addresses the individual student, treating him or her as a receptacle to be filled with knowledge. But in a meeting for learning the individual is always in relationship, and knowledge emerges in dialogue. It is not only what the student hears but what the student says back that counts. Here, learning happens *between* persons and not simple *within* the learner. (as cited in Intrator, 2005, p. xxxix)

#### Strategies for the Creation of a Mentoring Environment

The creation of a mentoring environment that reflects a sense of community is shaped by many events and attitudes. Three practices of particular importance have been identified by Parks (2000) to be: (a) hearth, (b) table, and (c) commons.

The word “hearth” conjures up an image of warmth, a place where you would want to pause for a while, perhaps linger for a chat with a friend, or sit and watch the flames and reflect on the day’s events. “Hearth places have the power to draw and hold us, for they are places of equilibrium offering an exquisite balance of stability and motion” (p. 154).

Creating a hearth place is one strategy for creating a mentoring environment.

The importance of concepts of a place setting and sharing are echoed throughout the literature on sense of community. “It has been said that the table is a place where you know there will be a place for you, where what is on the table will be shared and where you will be placed under obligation” (p. 156). Knowledge that one has a place in a community leads to feelings of security and trust, two important criteria in the development of mentoring relationships.

The third practice that leads to the creation of a mentoring environment is the “practice of commons” (Parks, 2000). “A powerful image buried deep in the civil imagination of American society is that of the commons” (p. 9). In past and present societies a commons is a cross-road at the center of a village. Commons create a place for people to “gather, play, protest, [experience] memorial and celebration and work out how they could live together” (p. 9). A commons provides the opportunity for students to intersect and interact.

Creating an environment that allows doctoral students the choice of acting as a mentor in one relationship and as a mentee in another is beneficial to learning. Woolfolk (as cited in Pelliccione & Albon, 2004) suggests that the impact of informal mentoring is heightened “when students are out of their comfort zone and in a state of disequilibrium” (p. 770). When learning is demanding, as it is during the various phases of the doctoral journey, informal mentoring can act as a “lifeline.”

#### Mentoring Mosaics

Mullen (2005) outlines six major concepts for alternate mentoring frameworks: (a) co-mentoring or collaborative mentoring, (b) lifelong mentoring, (c)

sociocultural learning activity, (d) mentoring mosaic, (e) mentoring community, and (f) mentoring leadership (p. 71). The framework that best suits this study is the mentoring mosaic and is defined as a “collegial network of multiple mentors and opportunities for growth” (p. 82). Other words used to describe this model are: “network,” “community,” and “family” (p. 82). Hargreaves and Fullan (2000) believe that mentoring mosaics should go beyond just one-on-one contact and that the whole school should become involved to become re-cultured (as cited in Wenger, 2004).

Kram (1988) has published extensively on mentoring relationships in the workplace. The author describes a type of mentoring mosaic called a “relationship constellation” (p. 149) where a person is surrounded by a variety of relationships with different people. The relationships could involve the focal person and a: (a) family member, (b) mentor(s), (c) boss, (d) special peer(s), (e) collegial peer(s), (f) information peer(s), (g) subordinate(s), and (h) outside work friends. There is a reciprocity within this design where an individual can give and receive information. Unlike traditional mentoring that depends on one relationship, multiple relationships can be formed at the same time perhaps for different reasons and also can change over time. The term “constellation” resonates with me and is described beautifully by Wenger (2004) as referring to “a grouping of stellar objects that are seen as a configuration even though they may not be particularly close to one another, of the same kind, or of the same size” (p. 127). The diversity in the aforementioned stellar mosaic echoes the diversity of life stage, academic, and professional diversity of doctoral students.

One of the key features of a stellar constellation is the fact that the stars connect to form a pattern. This relatedness and connection is important in a mentoring mosaic. “Within the mosaic members interchange roles as mentors and protégés, sponsoring the learning of all parties through a synergistic, flexible structure” (Mullen, 2005, p. 82). The power within this structure is not controlled by one person but is instead shared among the members.

The types of relationships formed and the structure of the mentoring mosaic has also been referred to as “musing” (Angelique, Kyle & Taylor, 2002). The author describes musing as “a process of creating peer communities that facilitates connections between naturally developing relationships, shared power and collective action” (p. 195). Musing overcomes the limitations involved in structured peer mentoring programs, where certain students are assigned as mentors for other students. Often these assigned groupings are not ideal due to the lack of like-mindedness of the students, power relationships and a lack of mutuality (Angelique et al., 2002).

Musing allows for an important element of learning - reflection. Barth (2004) captures the value of this reflective process, “...reflecting on practice – by observing practice, by writing about practice, by engaging in conversation about practice, by embracing the difference we encounter in practice – builds a school culture hospitable to both learning and community” (p. 74). Since the number of doctoral students attending the residential portion of the program was quite small, I believe that musing may already have taken place as a form of support and invitation to becoming part of the learning community.



### Outcomes of Informal Mentoring

Carol Mullen (2003) developed an informal mentoring group entitled The WIT (writers in training) cohort at the University of South Florida. The makeup of this group of doctoral students represented students from all stages of the program. Using this group as a case study for research into informal mentoring relationships, Mullen characterized the following benefits of participation in the group to be: (a) developing a sense of belonging and identity, (b) support for learning and attaining dreams, and (c) mutual support. Mullen found a synergy developed between students as the mentoring network focused on sharing work and experiences.

Positive outcomes associated with informal mentoring were identified as: (a) providing an opportunity to connect with each other, (b) an increase in overall feelings of confidence, (c) a support system that had a familial quality, (d) the discovery of the value of reciprocal learning, and (e) the holistic development of students as scholar-practitioners (pp. 421-422).

Although the WIT cohort does not parallel the program design of the residential phases of the program under study, many similarities exist between the two groups. The outcomes or impact of informal mentoring relationships from this study may be unique to the program or they may mirror previous studies.

Increased communication between students and a variety of opportunities to connect and assist each other may also lead to an increase over time of students self-identifying as stewards of their discipline.

## Stewardship

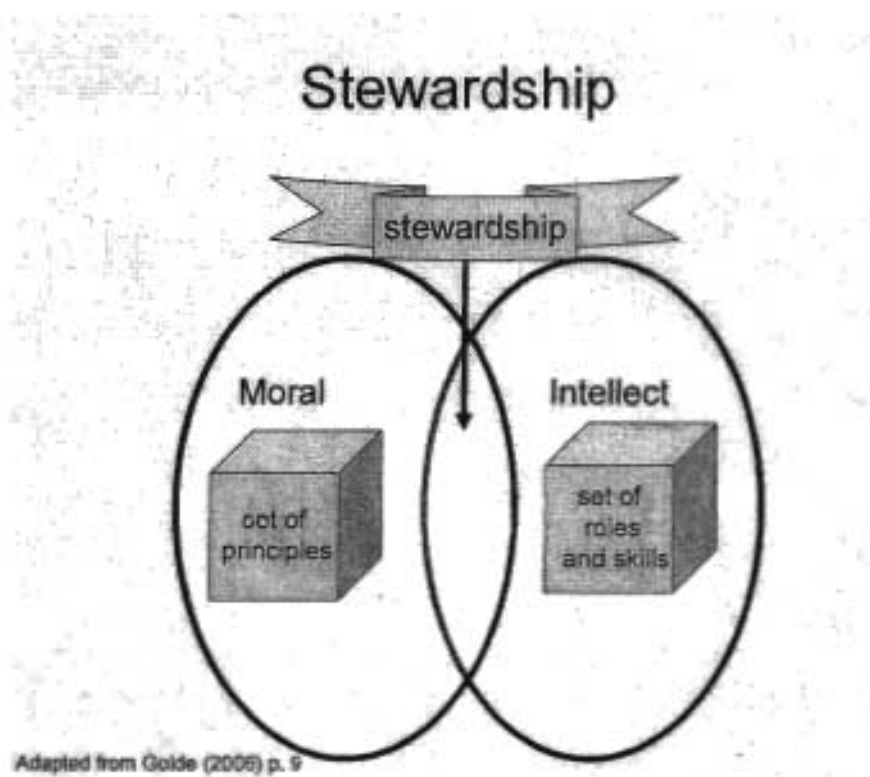
An ancillary branch of this study explores the concept of stewardship in doctoral education. A steward of a discipline has been described as “someone who will creatively generate new knowledge, critically conserve valuable and useful ideas, and responsibly transform those understandings through writing, teaching, and application” (Golde, Walker, & Associates, 2006, p. 5). It has been argued by these authors that the purpose of graduate education is grounded in the establishment of stewardship.

A doctoral degree and the concept of stewardship have both been described as “exist[ing] at the junction of the intellectual and moral” Shulman (as cited in Golde, Walker, & Assoc., 2006, p. 3). The intellectual component of the concept being associated with a set of roles and skills, while the moral component is associated with a set of principals. (Shulman, as cited in Golde et al., 2006). A visual depiction of the nature of stewardship has been created in Figure 5.

This study is not designed to determine if a correlation exists between either the formation of a sense of community or the practice of informal mentoring and the development of doctoral students as stewards of their discipline. Although this would make an interesting future study, it is beyond the scope of the current study. The design of the proposed study does allow for inquiry into the development over time of the qualities of stewardship from the perspective of doctoral students themselves and also into their perceptions of self-identification as stewards of their discipline, in this case the discipline of education.

By definition, “stewardship is a sense of personal responsibility for taking care of something that is not one’s own” (Wikipedia, 2007, p. 1). The pilot study for the questionnaire for this study showed a trend of increasing participants’ perception of the qualities associated with stewardship over time. Interestingly the participants recognized individual qualities of stewardship but were not aware that these qualities were part of the larger concept of stewardship.

These initial insights are in agreement with Golde, Walker and Associates (2006) who maintain that stewardship comprises a set of qualities that can be developed over time, and that stewardship is not an innate gift. How doctoral students reach this important junction of the moral and the intellectual is not clear in the literature. It is possible that the questionnaire for this study will cause students to reflect on the qualities of being a steward and will thus raise awareness. It is also possible that increasing communication between students and opportunities to connect and assist each other may also lead to heightened awareness.



*Figure 5.* Schematic representation of the concept of stewardship.

### CHAPTER THREE: METHODOLOGY AND PROCEDURES

This chapter presents both the methodology and methods that were used to conduct this study. In terms of methodology, the chapter opens with an overview of my research design and methodology. In terms of methods, this chapter describes the sampling procedures used in participant selection, the strategies and instrumentation chosen for data collection, management, and analysis. Ethical issues that were considered throughout this study are discussed at the conclusion of the chapter.

#### Overview of Research Design

Doctoral education is a process that involves candidates to pass through various stages within a program. Different stages require different skill sets and are associated with different types of demands. To capture the experiences of students throughout the various phases of the doctoral experience, this study has been designed in three strands, representing three different groups of students within the same program, as illustrated in Figure 6. The first strand (Strand A) involves those students at the beginning of their doctoral studies who had completed the first courses of their program. The second strand (Strand B) involves students who are midway through their program. The third strand (Strand C) involves current doctoral students beyond the midway benchmark and alumni students. The methods utilized in this study vary depending upon the educational strand of the participant and will be discussed in more detail in later sections of the chapter. A portrait of “sense of community” and its influence on the formation of informal mentoring relationships will be illuminated by comparing the experiences of doctoral students at different stages throughout the program.

### Description of Research Methodology

A mixed method research design was employed in this study. Johnson and Christensen (2004) describe mixed research as “a class of research studies in which a researcher mixes or combines qualitative and quantitative research techniques into a single research study” (p. 410). There are two qualitative approaches in this study: (a) face-to-face or phone interviews with participants in Strands A and B and (b) an open-ended question at the end of the survey instrument. The questionnaire is the quantitative approach to the study.

Johnson and Onwuegbuzie (2004) suggest that mixed method research is a third paradigm in educational research; moving away from an either/or position of choosing qualitative or quantitative research to an inclusive position which recognizes that both of these research paradigms are useful and important. The mixing process is seen by advocates of this paradigm as possible because both qualitative and quantitative research have some shared fundamental values. These shared values once identified led Howe (1988) and Reichardt and Rallis (1994) to a new thesis; the “compatibility thesis.” The shared fundamental values common to qualitative and quantitative research have been elucidated and include the following concepts: (a) inquiry is value laden, (b) knowledge is fallible, (c) any given data set can be explained by many theories, (d) importance of understanding and improving the human condition, (e) importance of communicating results to inform decisions,

## Doctoral educational timeline

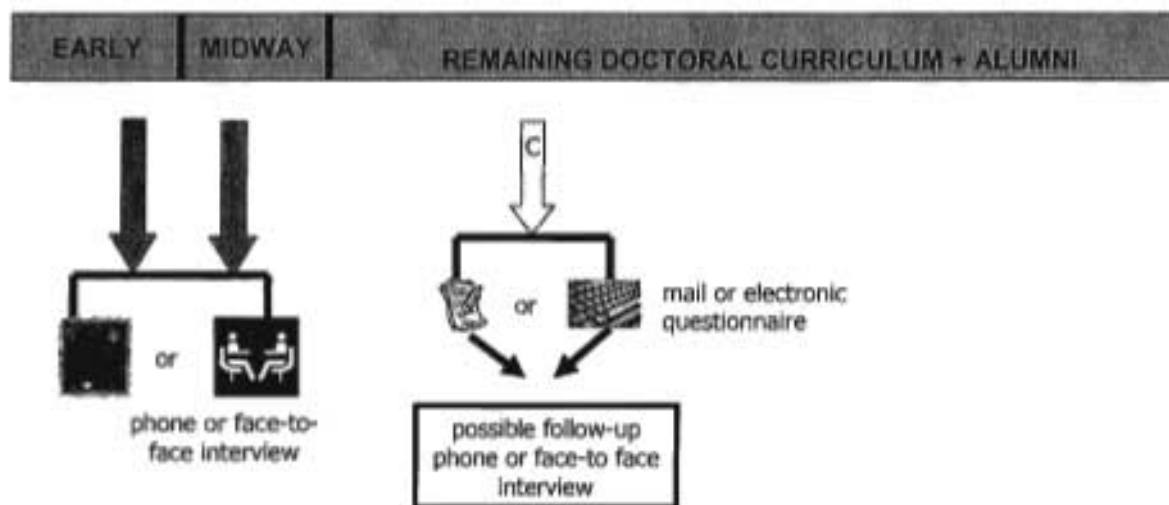


Figure 6. Schematic representation of research design.

(f) belief that the world is complex and often difficult to understand, and (g) importance of incorporating safeguards to minimize invalidity and confirmation bias.

Pragmatism is the philosophical underpinning of the compatibility thesis (Johnson & Onwuegbuzie, 2004). Central to this philosophy is the idea that “research approaches should be mixed in ways that offer the best opportunity for answering important research questions” (p. 16). The research question(s) becomes the primary focus of the study and methods chosen to best answer the question(s) become secondary.

A fundamental principle of mixed research states that researchers should mix the methods used to collect data in such a way that the strengths of the methods complement each other and that the weaknesses in the methods do not overlap (Johnson & Turner, 2003). Tashakkori and Teddlie (2003) suggest that there is a unique character to mixed methods that transcends a simple combining of methods. This type of research design was chosen for this study because I felt that it would produce a more complete portrait in terms of depth and breadth of the experience of doctoral students. The two instruments that I chose for this study do complement each other in terms of overlapping weaknesses being minimized. The questionnaire designed for this study is predominately quantitative in nature and thus has the strength of providing data in a short amount of time. Qualitative interviews on the other hand, tend to take more time to undertake and are more time-consuming in terms of data collection and analysis. The relatively large population of past and present students enrolled in the doctoral program makes the time required for a solely qualitative approach unreasonable. To capture the participants’ experiences,



especially when describing complex phenomena is more likely to be captured with a qualitative approach. With this in mind, I encouraged participants to consider an interview at the conclusion of the questionnaire.

The data generated from a mixed method research design were triangulated, as various perspectives and evidence overlap by incorporating different methods into the design. Findings from one method can be corroborated through another method. By mixing the methods a more complete portrait of doctoral students' sense of community and its influence on informal mentoring relationship can be explored.

In addition to the triangulation rationale for choosing to employ a mixed methods research design, Greene, Caracelli, and Graham (1989) suggest that this type of research provides complementarity leading to elaboration and enhancement. Results from one method can often be clarified by looking at the results of another method. Additionally mixed method research can lead to the initiation of new perspectives on the part of the researcher as new research questions come to the foreground.

The qualitative and quantitative components of the research took place concurrently and have equal emphasis, as indicated by the red circle highlighted in the following mixed method design matrix (see Figure 7).

The sequence of the study follows the eight steps of the mixed research cycle as outlined by Johnson and Christensen (2004) in Figure 8.

#### Participant Selection

The population for this study consisted of students currently enrolled or alumni from a doctoral program in a university located in Ontario. Those individuals

## Mixed method design matrix

		Time Order Decision	
		Concurrent	Sequential
Paradigm Emphasis Decision	Equal Status	QUAL + QUAN	QUAL $\Rightarrow$ QUAN QUAN $\Rightarrow$ QUAL
	Dominant Status	QUAL + quan QUAN + qual	QUAL $\Rightarrow$ quan qual $\Rightarrow$ QUAN QUAN $\Rightarrow$ qual quan $\Rightarrow$ QUAL

(Johnson & Christensen, 2004, p.418)

*Figure 7.* The time order and paradigm emphasis utilized in this mixed method design [cited with author's permission].

## Mixed Research Cycle

(Johnson & Christensen, 2004, p. 422)



Figure 8. Mixed method research cycle [cited with author's permission].

who were willing to volunteer to participate in the study encompass this sample of convenience (Johnson & Christensen, 2004).

### Instrumentation

The research instruments utilized in this study will be discussed in this section.

#### *Questionnaire*

A questionnaire is a common research instrument used in survey studies when the focus of the study is to learn more about a population. "Surveys are information collection methods used to describe, compare, or explain individual and societal knowledge, feelings, values, preferences, and behavior" (Fink, 2006, p. 1). The survey tool used in this study was implemented only once and is thus classified as a cross-sectional survey (Creswell, 2002). Gaining insights from as many doctoral students as possible provided the rationale for choosing a questionnaire as a research instrument. Since the doctoral student population for this program was large, a questionnaire is a good choice of instrument because it can be distributed to large groups, it is relatively inexpensive, and has a quick turnaround time (Johnson & Christensen, 2004).

*Questionnaire design.* The survey instrument developed for this study is a compilation of original sections and sections fashioned using an existing survey designed by Golde and Dore (2001) as a model. The design of the questionnaire encompasses six sections: (a) the availability, use and encouragement for use of existing resources or programs for doctoral students; (b) doctoral experiences of a sense of community; (c) background information of the participants; (d) informal

mentoring experiences - in terms of the behaviour of informal peer mentors, and the nature and number of experiences; (e) participants' current perception of the development of qualities associated with stewardship and whether these qualities have changed over time; and (f) a chance to further participate in the study by agreeing to participate in an interview and an opportunity to comment or share a personal experience relevant to the study. The first five sections of the questionnaire are quantitative in nature and design utilizing closed-ended items, while the final section follows a qualitative format. An open ended question placed at the end of the questionnaire allows participants the opportunity to recall a critical incident in their educational experiences. Cohen, Manion and Morrison (2000) have found that "sometimes one event can occur which reveals an extremely important insight into a person or situation" (p. 310). It was my hope that the inclusion of this question will hopefully provide data rich in description.

During the creation of the questions and statements for this questionnaire, I was cognizant of the principles of questionnaire construction as outlined by Johnson and Christensen (2004; Appendix A).

*Questionnaire distribution.* All current and alumni graduate students from the doctoral program, beyond the midway benchmark, (Strand C), were contacted via email with an introductory letter informing them of the nature of the research and requesting participation in the study.

Participants were given the option of receiving the questionnaire by mail or in an electronic format.

To encourage a high response rate to mailed questionnaires several strategies were implemented as outlined by Creswell (2002): (a) participants were notified via email in advance of receiving the questionnaire, (b) a second mailing of the questionnaire occurred 2 weeks following the first mailing to those participants who did not return the instrument, (c) a follow-up email was sent electronically as a reminder to return the instrument to those participants who had not done so after a 4- week time period, (d) since this study directly relates to the participant's educational experiences, it should be of interest to the participants, and (e) a draw for a gift voucher was offered as an incentive to participate.

Each participant was thanked for his/her time and given the opportunity to ask any questions.

*Questionnaire validation (pilot study).* The survey instrument that I developed was reviewed in a pilot study. As described earlier, the participants in the pilot study were chosen to be as similar to the research participants as possible. The reviewers were asked to evaluate the instrument for: (a) clarity, (b) ease of answering question, and (c) length of time for completion. After each participant had completed the questionnaire, I spoke with him/her to discuss their evaluations. The following questions were asked of each participant following the completion of his/her survey:

1. Approximately how long did it take to complete the questionnaire?
2. Did you find the questionnaire interesting to complete?
3. Were the instructions provided clear and understandable for section A of the questionnaire?

4. Were the instructions provided clear and understandable for section B of the questionnaire?
5. Were the instructions provided clear and understandable for section C of the questionnaire?
6. Were the instructions provided clear and understandable for section D of the questionnaire?
7. Were the instructions provided clear and understandable for section E of the questionnaire?
8. Were the instructions provided clear and understandable for section F of the questionnaire?
9. Do you have any suggestions for improvements to this questionnaire?

The feedback I received was very positive. Participants found the questionnaire to be clear, organized in terms of layout, interesting, and able to be completed within the 30-minute time frame as indicated. Piloting the questionnaire “increases the reliability, validity, and practicability of the questionnaire” (Cohen, Manion, & Morrison, 2000, p. 260). All of the participants interpreted the key terms for the study the same way because they were clearly outlined on the first page. Two of the participants commented on the absence of a “not sure” response category. Whether to include a “no opinion” option in the response choices was well considered during the design phase of the questionnaire. Literature on this issue is divided with some authors feeling that a “no preference” category provides participants with all options, while others feel that the absence of this neutral category forces a participant to give more consideration to the response and forces a choice. By choosing to utilize

the latter viewpoint in the questionnaire, I am assuming that all of the participants indeed have an opinion and that forced choice is justified.

### *Interview*

Interviews are commonly used in research when the purpose of the study “is to allow us to enter into the other person’s perspective” (Patton, 2002, p. 341).

Gathering the perspectives of doctoral students helps to paint a picture of the existence and nature of a sense of community and provide insights into informal mentoring relationships.

The research design includes interviewing two different groups of doctoral students at two stages in their academic journey; early in the program after completing first courses and midway through the program. Since the potential participants were from various geographical locations throughout Ontario, a choice was offered of either a face-to-face or phone interview. The interviews were conducted with the aid of an interview guide (Appendix B) to direct an informal but guided approach (Patton, 2002). This style of interview allowed me the freedom to probe the participants further and to generate follow-up questions during the interview. The guide also “makes interviewing a number of different people more systematic and comprehensive by delimiting in advance the issues to be explored” (p. 343). The interview questions were designed to address six types of questions that are of value for obtaining in-depth data. Patton (2002) identifies these question types as: (a) experience and behavioural, (b) opinion and values, (c) feelings, (d) knowledge, (e) sensory, and (f) background/demographic (pp. 349-351).



*Interview procedure.* All doctoral students currently registered in the doctoral program who fell into one of the two aforementioned groups received a letter of invitation/consent to participate in this study via email. The email was sent by the administrative assistant who manages the doctoral student email directory and had agreed to perform this activity. Potential participants were given the opportunity to contact me, the researcher, to ask questions for clarification of the study. Consenting participants provided the researcher with contact information.

Participants were asked to be involved in a single, audiotaped in-depth face-to-face or phone interview of approximately 45 minute duration, at a mutually convenient time and location. A copy of the interview guide was made available to the participants prior to the interview, so they had time to consider the questions. The telephone interview began with a telephone script (Appendix C) and was structured around an interview guide. All personal data were kept strictly confidential.

During the interview process itself I also took personal notes with reference to the interview process and any ideas or thoughts that arose during the interview.

“Interviews enable participants - be they interviewers or interviewees - to discuss their interpretations of the world in which they live, and to express how they regard situations from their own point of view” (Cohen, Manion, & Morrison, 2000, p. 267).

While conducting interviews for my pilot study, I found that recording my thoughts during an interview led to probing questions and hunches that helped to clarify and enrich details of the participant’s point of view.

Each participant was thanked for his/her time and given the opportunity to ask any questions.

## Data Collection Strategies

This section of the chapter outlines the strategies that were used during the data collection phase of the study.

### *Data Collection from Questionnaires*

A planning flowchart for mailing, collecting, and managing questionnaires is outlined in Figure 9. For questionnaires distributed via email, a flowchart outlined in Figure 10 was constructed.

### *Data Collection from Interviews*

All interview data were coded with a random triple digit number so that the data would not be connected to participants' names or email addresses. The recorded interviews were transcribed by the researcher. Subsequently a copy of the interview was made available to the participant for verification of accuracy and to provide the opportunity to add or clarify any points.

### *Data Validation*

Validity of data collection refers “to the idea of conducting high-quality research... [which is] plausible, credible, trustworthy and therefore defensible” (Johnson & Christensen, 2000, p. 207). Three key types of validity have been outlined by Maxwell (1992) and were adhered to during data collection for this study: (a) descriptive, (b) interpretive, and (c) theoretical validity.

As the sole researcher associated with this study, I am cognizant of the accuracy that must be maintained when recording facts or descriptive information which will support the descriptive validity of this study. The strategies that I have incorporated into the research design that will help to ensure descriptive validity are:

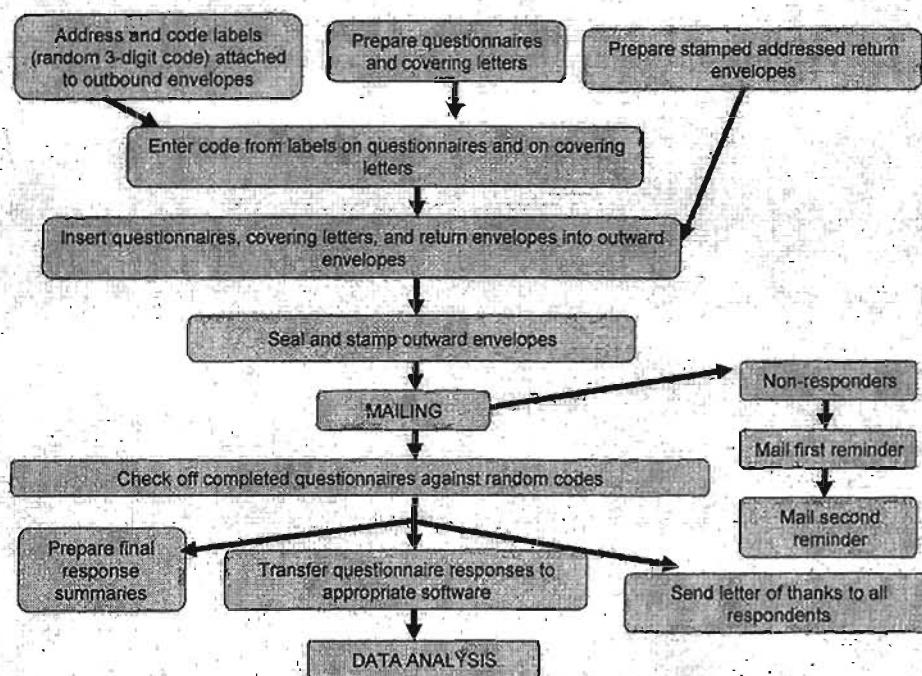
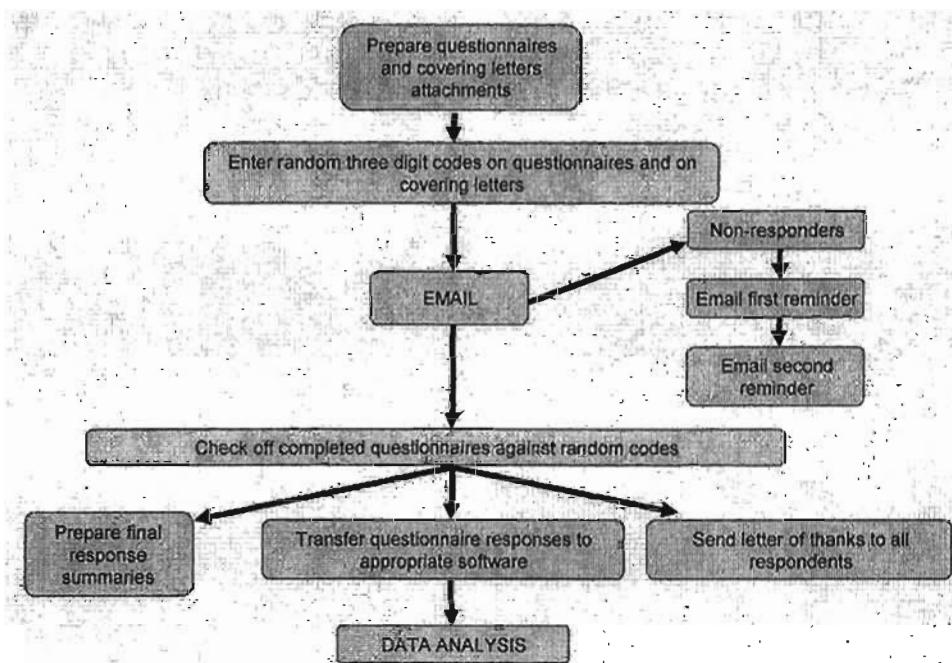


Figure 9. Planning flow chart for mailed questionnaires (Adapted from Hoinville & Jowell, 1978).



*Figure 10.* Planning flow chart for emailed questionnaires (Adapted from Hoinville & Jowell, 1978).

(a) audiotaping all face-to-face and phone interviews, (b) transcription of tapes by researcher, and (c) member checks of all audiotaped data.

Interpretive validity deals with the researcher's ability to present the "emic" or insider's view. The data for this study are based on the experiences of doctoral and alumni students, and thus it is critical that my interpretations of their meanings are reflective of the participant's perspective. However, I am aware that my perspective "is part of the context for the findings" (Patton, 2002, p. 64). A personal journal will be kept throughout this study to ensure that an "ongoing conversation of self-awareness and self-understanding" (p. 64) will occur. This process of personal reflection contributes to the credibility of the data and is a form of "sharpening the instrument" (p. 64) that is the researcher. Nightingale and Cromby (1999) compel researchers "to explore the ways in which a researcher's involvement with a particular study influences, acts upon, and informs such research" (p. 228). By keeping my theoretical orientation at the forefront of awareness during the data collection phase of this study, I hoped to align this orientation with the collection of data.

### Data Management and Analysis

Data sets have been described as being "fragile assets" (Freeland & Carney, 1992, p. 642) and the researcher must carefully plan for their management. Data management begins when the first datum of a study is generated. Strategies for data management and analysis for this study are presented in this section. The guiding focus of these strategies was to obtain an in-depth view of the participants' experiences.

Two different software programs were used to manage and analyze the data collected from the quantitative and qualitative phases of the study; Excel (Microsoft Office Excel 2003) and ATLAS.ti (ATLAS.ti V 5.0), respectively. In general, computer programs are a great boon in this step of the research because they help to: (a) decrease the amount of time it would take to manually perform data analysis, (b) decrease the drudgery associated with piles of paperwork, (c) allow procedures to be followed more systematically and explicitly, (d) ensure completeness and allow for refinement, and (e) permit flexibility and revision in analysis (Johnson & Christensen, 2004).

A key procedure in the management of data is the development of a code book. The code book for this study was divided into two sections; (a) qualitative and (b) quantitative. This book contains the units created to “speak” to a computer (Fink, 2006, p. 85). The two sections of the code book will be discussed in more detail in the following sections.

#### *Management of Quantitative Data*

To manage the quantitative data generated from the study a code book was created which contains: (a) the survey instrument used in the study, (b) description of all questions, (c) codes and labels created, and (d) variable names associated with the questionnaire.

#### *Management of Qualitative Data*

Miles and Huberman (1994) outline three areas of focus to consider when managing qualitative data: (a) ensure high quality accessible data, (b) document the type of analysis carried out on the data, and (c) ensure retention of data.

In order for data to be accessible they must be formatted in such a way to be easily stored and retrieved. Qualitative data generated from this study were stored in both computer and physical files. The analysis of the qualitative data was conducted in multiple stages.

During the interpretation phase of a mixed method design, the qualitative data and quantitative data should be compared in some fashion (Creswell, 2002). One of the strategies that he suggests was adopted for this study and involves evaluating how well the themes emerging from the interview data support or refute the results generated from the questionnaire (p. 571). The summary chapter of this thesis is written as a single phase study integrating results from both the qualitative and quantitative phases.

#### *Data Analysis Process*

Data analysis for this study utilized four of the seven potential stages in the analysis process outlined by Tashakkori and Teddlie (2003) for mixed methods research. The stages employed include: (a) data reduction, (b) data display, (c) data comparison, and (d) data integration (p. 375) and were undertaken in a non linear fashion. The exploratory nature of this research and the concurrent time order design of the qualitative and quantitative portions of the study influenced the stages chosen for data analysis.

#### *Data Reduction*

Procedures employed for the reduction of both quantitative and qualitative data are described in this section.

*Quantitative data.* Completed questionnaires were reviewed once returned for any missing data. A response rate was calculated for the survey instrument to be 43%. Of the 30 invitations to participate distributed, 13 respondents completed and returned questionnaires. A decision was made at this point in the research to limit the statistical analysis of the data to the computation of descriptive statistics, due to the low response rate.

As a first step, the data representing closed-ended questionnaire responses were entered into an Excel computer program spreadsheet. These data were nonparametric or categorical in nature. Responses from each section of the questionnaire were entered into separate spreadsheets within a main file. Care was taken at this stage in the research process to avoid incorrect data entry or miscoding.

Second, the number of responses to each question ( $N$ ) was tallied and recorded. Descriptive statistics including means ( $M$ ), standard deviations ( $SD$ ), and frequencies were calculated where appropriate. Details of the type of statistic calculated and the reason behind the choice for each section will be included in the following chapter.

Third, where appropriate, the calculated means of responses to questions were ranked in order of their importance from the perspective of the participants.

Descriptive statistics are useful in calculating the number of respondents who fall into each category producing frequencies, means and standard deviations. From this analysis various charts and graphs were generated to visually describe the results.

*Qualitative data.* Interviews were recorded onto standard cassette tapes for both face-to-face and phone interviews. An external microphone was used to assist in



voice pickup in face-to-face interviews and a phone voice recorder was used to capture phone interview data. Tapes were transcribed using a transcription machine by the researcher and an assistant into Word documents. A copy of the completed transcription was made available to the participants for review.

Once the interviews were transcribed and member checks completed the data files were uploaded into the software program, Atlas.ti. This process assigns a specific code (P number) to the interview. This storage/retrieval code was cross-referenced to include unique letter/number combinations indicating the type of interview, date, and strand.

Each line of the interview question and response was assigned a number by the software. This made it very easy to reference quotes and to code responses. Initial codes were reorganized into families. While coding it was possible to simultaneously select direct quotes to be saved. It was a time-saving option to have the ability to print out a list of quotes associated with a particular theme. Each quote was identified by the code name and also referenced by the participant number and line number from the interview. Lists of codes were also generated.

The final open-ended question on the survey instrument and possible subsequent face-to-face or phone interview was treated in a similar fashion. Backup discs were made of all files on a regular basis.

A physical file was also created to store the physical raw data from this study. It contained completed questionnaires, interview sheets, transcriptions, tapes, field notes, and memos.

### *Data Display*

From this analysis various charts and graphs were generated to visually describe the findings. The display of data will be presented in Chapter 4.

### *Data Comparison*

The data comparison stage was performed manually. Printouts of data connected to themes arising from interviews were sorted and combined with data generated from the survey. The qualitative and quantitative data were analyzed to determine if the two sets of data agreed with each other or not. It was noted when one method generated data unique to the study.

### *Data Integration*

Data integration was the last stage in the data analysis process. Chapter 4 of the study presents the integration of the data.

### *Ethical Considerations*

This study has been reviewed and approved by the Brock University Research Ethics Review Board (File 06-051).

Since this research involved the participation of humans, there were several ethical considerations that must be observed. All of the potential participants received the information necessary for them to make an informed decision on whether or not they wished to participate in the study. In introductory letters, a description of the purpose of the study, the type of data-gathering instruments that would be used, the time commitment, and the confidentiality and consequences of their involvement was outlined.

There were no potential risks for participants choosing to become involved in this study. There are however two identifiable benefits. First, the participants would have an opportunity to reflect on their past and present experiences as a member of a diverse group of students in a doctoral program. Second, involvement would give the participants a unique opportunity to share their experiences of connection so vital in helping to paint the portrait of “sense of community” within doctoral education.

As explained in the letters of introduction, the participants had the right to withdraw from the study at any time without penalty. Any data collected from a participant who wished to withdraw would be destroyed immediately.

The personal identifiers of the participants such as name, birth date, address, gender, and temporal location in the PhD program were to be collected during this study. In order to protect the confidentiality of the participants during data collection, the participants were assigned a random 3-digit code, to be used for data collection, analysis, and reporting purposes. The data were not be connected to participants’ personal identifiers. The consent forms and code key will be stored securely in the researcher’s office in a separate location during data collection. All materials such as tapes, interview notes, and transcriptions will be destroyed 2 years following the completion of the study.

## CHAPTER FOUR: PRESENTATION OF FINDINGS

The primary purpose of this study was to explore two aspects of doctoral education from the perspective of current and alumni doctoral students. The first aspect considered the concept of “sense of community” among students. Specifically, the: (a) nature, (b) creation, (c) maintenance, and (d) importance of “sense of community” in doctoral education. The second aspect considered the impact that “sense of community” might have on the formation of informal mentoring relationships between students. A mixed method research design was employed for data collection in this study. The quantitative data collection instrument was a questionnaire containing 75 closed-ended questions. This survey was completed by 13 participants beyond the midway point in their program (Strand C). This group represented a diverse mixture of: (a) 3 male and 10 female participants, (b) 2 full-time and 11 part-time registrants, (c) 5 traditional and 8 non-traditional participants, (d) married and single marital status, (e) some with families, and (f) encompassing a wide range of ages. The qualitative data collection methods included: (a) an open-ended question at the end of the questionnaire and (b) face-to-face interviews. The open-ended question provided participants with an opportunity to elaborate on any of their answers and to describe an experience pertaining to “sense of community” and/or informal mentoring relationships experienced during their doctoral experience. Seven participants in total agreed to face-to-face interviews; 4 of these participants interviewed as a follow-up to the questionnaire (Strand C) and 3 participants (female, 2 part-time and 1 full-time) from early stages of their program (Strands A and B). After all of the quantitative and qualitative data were collected data analysis began.

A detailed description of data management and analysis for this study appears in Chapter 3.

The findings of this chapter relate to and are organized around the primary research question and 5 subquestions of the study:

Do doctoral students feel connected to one another?

1. Does a “sense of community” already exist and flourish in doctoral education?
2. Are the elements of the doctoral program organized to yield the desired state of connection?
3. Is a “sense of community” a foundational element in the formation of naturally occurring relationships among doctoral students?
4. What educational and socio-emotional benefits are associated with informal mentoring relationships during the doctoral experience?
5. Do doctoral students perceive a change in their development as stewards of their discipline over time?

Themes and concepts that emerged from the analysis of the data provided a secondary level of organizing the data under each subquestion. Both qualitative and quantitative findings are presented in an integrative manner under these secondary headings.

Subquestion 1: Does a “Sense of Community” Already Exist and Flourish in  
Doctoral Education?

It is important to determine whether a “sense of community” exists and to what degree in doctoral education since academic isolation has identified as one of the key factors in both increasing attrition rates and increasing time to completion of

degree for students (Golde, 2000; Lovitts, 2001). Both qualitative and quantitative data were collected to facilitate understanding of this construct from the perspective of students in the program.

Section B of the questionnaire (Appendix D) contained 12 statements pertaining to participants' experiences regarding sense of community in their doctoral program. The participants (Strand C) were asked to indicate the extent to which they agreed or disagreed with each statement. The scale ranged from: strongly disagree (1), disagree (2), agree (3), to strongly agree (4). Data from this section of the questionnaire were entered into an Excel spreadsheet and the mean and standard deviation were calculated. The statements were then ranked according to the mean values with their associated standard deviations and number of responses (see Table 1). Frequency counts were also computed to establish the number of students who indicated agreement or disagreement with each statement. Qualitative data were also collected dealing with "sense of community" through interviews and an open-ended question on the questionnaire.

This section will be divided into two groupings that emerged through analysis of the data: (a) the presence of a sense of community and (b) the absence of a sense of community.

#### *Presence of a Sense of Community*

Frequency counts indicated that 77% of the questionnaire participants felt that a "sense of community" did indeed exist in their program. In the rank order of the statements, the presence of a sense of community in the program placed 6 out of 12 (M=2.77, SD=0.93; see Table 1).

Qualitative data pertaining to the presence of a sense of community separated out into two groupings of ideas. The first grouping included participants who felt that a sense of community was fostered by the program in terms by both a cohort arrangement and by a residence experience. The second grouping included participants who felt that sense of community was fostered by the students themselves. These data are summarized in Figure 11.

A summative statement was expressed by one participant who felt that “[a] sense of community is fostered by this program in many ways” and also claimed that “my sense of community was fostered [early in the program] ” (P8, 28/20). The cohort arrangement of students remaining together as a group and proceeding through the program emerged from the data as one of the ways that the program fostered a sense of community. Additionally the two residential experience emerged as a fostering force. One participant stated, “[g]iven that it is a rushed program with a lot expected, by having a cohort there is inherently some element of sense of community...I feel that it is an enriched situation because of us having the residential component and staying with a [cohort]” (P4, 66). While this participant was staying in residence she experienced “walking back to residence [together] and we would all go for a walk at night...there would be a little more talking about people’s backgrounds...we were still mostly talking about our assignments...I definitely would say that residence affects sense of community” (P4, 50). Expressing similar ideas, another participant commented on the cohort arrangement: “I like that cohort idea, I think it’s really helpful because there are other people close to the same place as I am in the program...it is very supportive,

Table 1

*Rank Order, Mean, Standard Deviation, and Number of Responses to Questionnaire  
Statements Pertaining to Sense of Community from Doctoral Students' Perspective*

Rank	Statement	<i>M</i>	<i>SD</i>	<i>N</i>
1	Students and faculty care about each other	3.38	0.65	13
2	There is a sense of solidarity among students who enter the program at the same time	2.92	1.04	13
3	Graduate students are treated with respect	2.85	1.21	12
4	Faculty are accessible to graduate students	2.85	0.99	12
5	There is a feeling of connection among students	2.85	0.99	13
6	There is a sense of community in our program	2.77	0.93	13
7	Graduate students learn about different professional careers through the diversity of students in the program	2.77	0.93	13
8	Students participate in reciprocal learning	2.69	0.75	13
9	Students and faculty collaborate on publications	2.62	0.96	13
10	There is a sense of belonging to a department	2.46	1.05	13
11	Faculty make sure that students feel like members of the department	2.38	0.87	13
12	Graduate students are given an active role in departmental decisions that affect them	2.00	0.82	13



[a] peer situation, non-competitive, highly supportive and it also creates a can-do atmosphere” (P6, 60). Another participant felt that a sense of community existed “between the cohorts” (P7, 85) as well as within a single cohort. The quantitative data mirrors the idea that sense of community is enhanced and fostered by a cohort arrangement. The statement, There is a sense of solidarity among students who enter the program at the same time ( $M=2.92$ ,  $SD=1.04$ , ranked 2 out of 12 in importance for experiences held by the participants).

The second grouping of qualitative data suggests that the students themselves act to foster a sense of community. A social authority is one of the ways this participant recognizes as valuable to sense of community:

I openly admit that I’ve become kind of waffling in terms of trying to get things done because no one is on my case on a regular basis. Supervisors can go to a point, but they also recognize it’s you that have to do it, whereas when it’s peers that are pushing you, there is often a tendency to get it done a little bit faster. They have no authority over you, but there is a social authority that ...comes into play and that’s really valuable. (P1, 49)

Seventy-seven percent of questionnaire participants felt that a feeling of connection existed among students.

Another participant initiated the development of a community of researchers interested in the same field: “I’ve created a community of scholars in my area of expertise, so I’m on an auto-ethnography list-serve [and] I go to qualitative conferences (P7, 81).

Relationships of the participants with faculty members ranked high in the list of statements describing doctoral students' experiences of sense of community (see Table 1). "Students and faculty care about each other" ranked 1 out of 12 ( $M=3.38$ ,  $SD=0.65$ ) with a frequency percent of 92% of the participants agreeing with this statement. "Graduate students are treated with respect" ranked 3 out of 12 ( $M=2.85$ ,  $SD=1.21$ ) with 83% agreement among participants. Tied for third place ranking was the statement that "faculty are accessible to graduate students" ( $M=2.85$ ,  $SD=0.99$ ). No qualitative data were collected regarding the relationship doctoral students have with faculty members.

#### *Absence of Sense of Community*

Figure 12 represents an overview of the qualitative data that emerged around the theme of absence of a sense of community. A range exists in how scarce the concept of community was for the participants from tentatively present to absent. When asked about the cohort arrangement, 1 participant responded, "I don't feel that ours would stay connected. Maybe the small friendships that are formed would stay connected, but not as a community, no" (P4, 38).

Lack of recognition of a graduate student culture was offered as one reason why a sense of community was absent:

One of the things that the department [needs]...is developing a culture of research for graduate students...just even getting the idea of a graduate student culture going...is going to be really hard here. I don't think that there is a perception that there is a graduate student culture...there seems to almost to be an understanding that what you do as a graduate student is with your

advisor and that that's your line of responsibility and that's your sort of lifeline if you have questions and they should be able to answer them. And the reality is, it's a developing program, I'm not sure anybody, any one faculty member could have all the answers. [H]ow does one encourage a little bit of cross-sharing of information and the idea that people might get together? I'm not sure. (P2, 77)

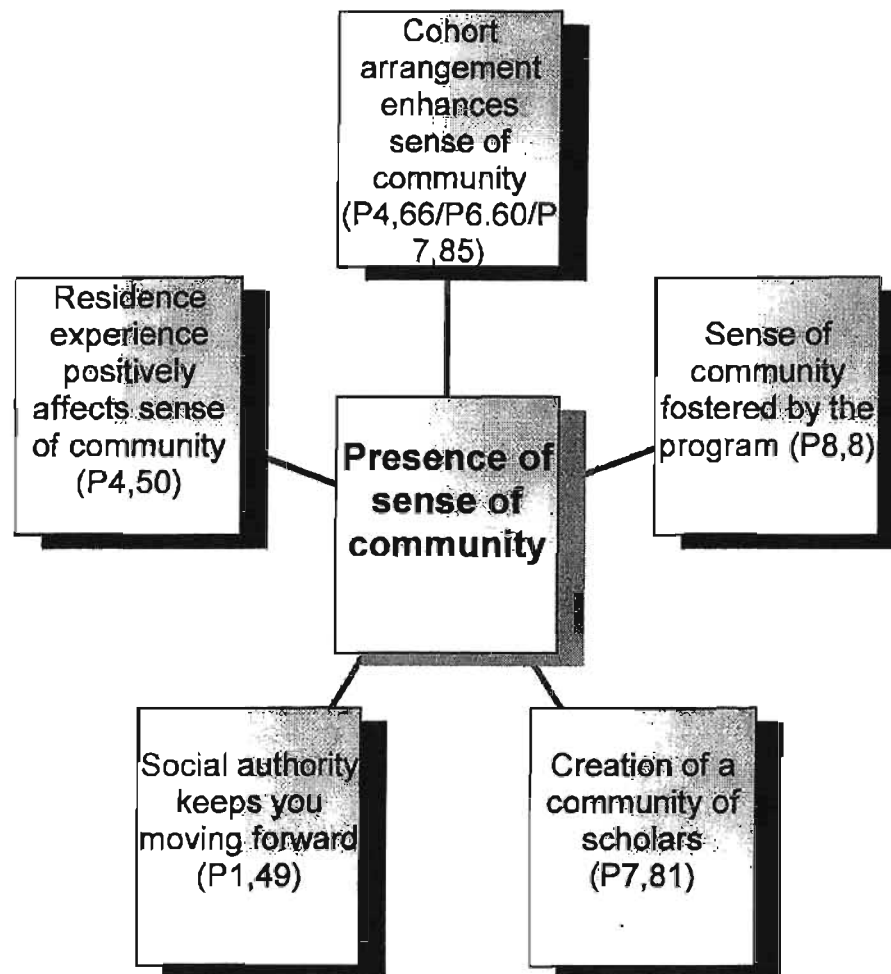
Another reason offered for the absence of sense of community was that students themselves may not perceive togetherness.

I think a lot of people navigate the program with a sense that although there is this framework of...together as a core and together with the advisor and...together in your online course, [but] don't perceive togetherness as part of the experience, they perceive it as they are just trying to get through. (P2, 125)

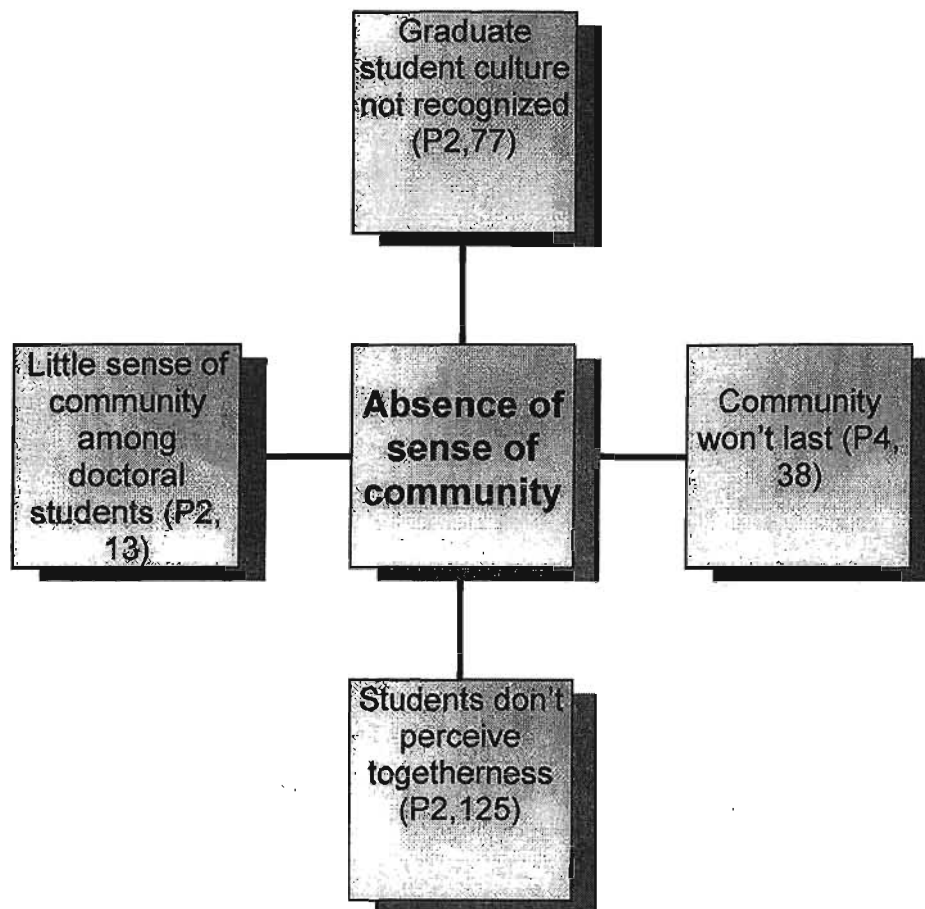
This same participant felt that "there was so little sense of connection amongst the PhD students" (P2, 13).

#### Subquestion 2: Are the Elements of the Doctoral Program Organized to Yield the Desired State of Connection?

Various practices and resources had been outlined in the literature as having a positive contribution to the establishment and maintenance of a sense of community (Johnston, 1995). This subquestion explores which programs and/or resources were available to the participants, whether or not they used what was available and whether or not they were encouraged to use them. Elements of the program which either enhanced or hindered connection were identified by the participants. Lastly,



*Figure 11.* Schematic representation of the elements that emerged from qualitative data contributing to the presence of sense of community.



*Figure 12.* Schematic representation of the elements that emerged from qualitative data contributing to the absence of sense of community.

participants describe the challenges which they experienced when they first began their doctoral program.

*Availability, Usage, and Degree of Encouragement for Use of Programs and/or Resources*

Section A of the questionnaire (Appendix D) contained 10 resources/programs that some universities offer for doctoral students. Participants were asked to first indicate whether the resource/program was available to them on a scale ranging from: no (1), don't know (2), to yes (3). Second, participants were asked to indicate their usage of the resource/program on a scale of: no (1) and yes (2). Third, participants were asked to indicate the degree of encouragement that they received from faculty to use the resource/program. The scale for this section of the questionnaire ranged from: discouraged (1), neutral (2), encouraged (3), to don't remember (4).

Data from this section of the questionnaire were entered into an Excel spreadsheet. Frequency counts were tallied to establish the number of participants who indicated the resource/program was available to them, the number of participants who used the resource/program, and the number who were encouraged to use the resource/program. The frequency counts were then converted into percentages and the results from this section of the questionnaire are presented in a bar graph (see Figure 13).

Qualitative data indicated that participants did “get an orientation guide” (P3, 11), “had an orientation day” (P5, 37), “received a handbook” (P5, 37), and had access to a discussion board (P4, 82). The participant who mentioned the discussion board was uncertain how many people would choose to use it. She wondered,

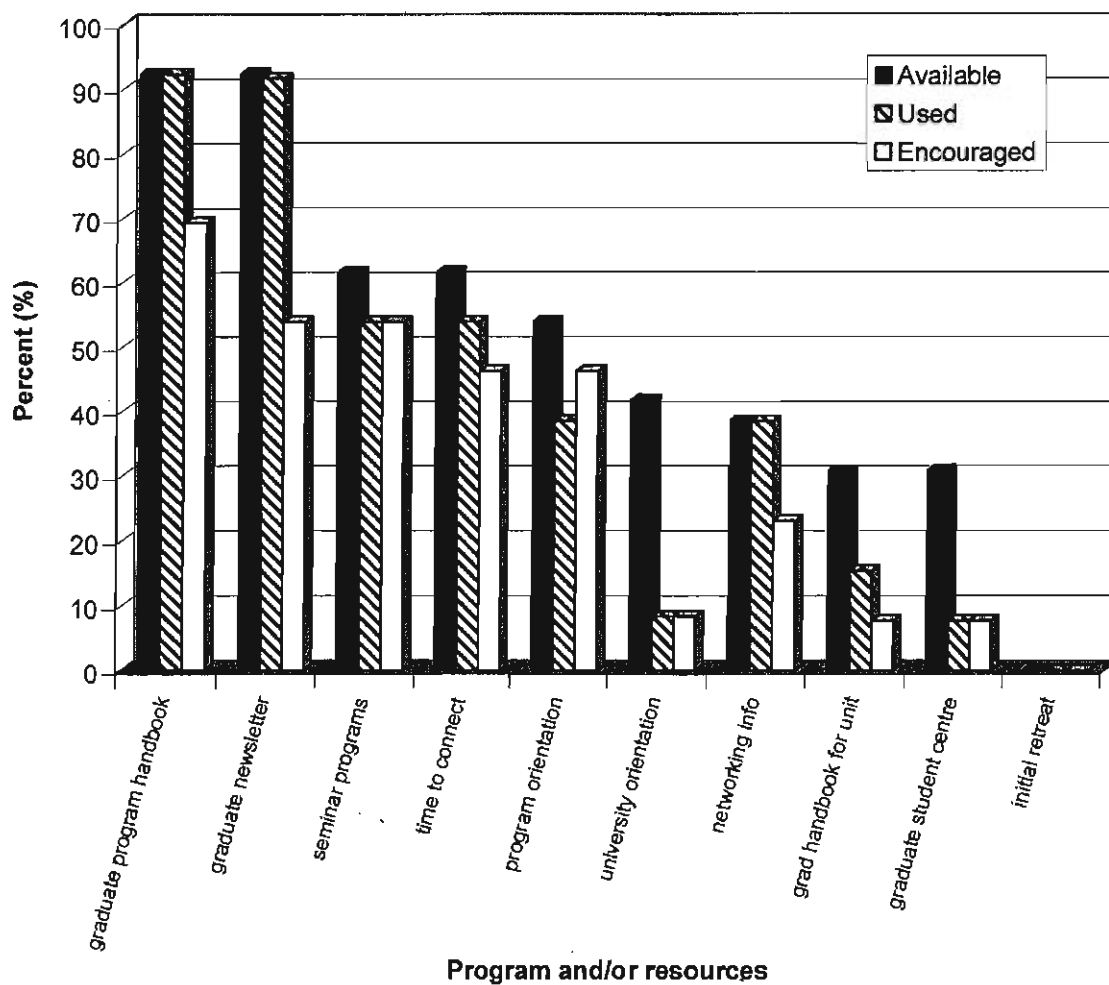
would people put honest questions they had or concerns if other people could see it?...when you put something into outer space on WebCT or email, you don't know who is looking at it and so I think that makes it tough for a sense of community because it is questionable as to what the norms [are], the context that [it is seen in] and what the [other people] are thinking. (P4, 82)

### *Elements of Program that Enhanced Connection*

Two major program elements were identified by the interview participants as acting to enhance connections between doctoral students: the residence experience and the cohort experience. General feelings of the participants in terms of connection will be presented at the end of this section. Quantitative data were not collected concerning those elements of the program which might have enhanced student connection.

*Residence experience.* A participant who had a residence experience felt that “[the students] connected more because they were at residence and they got more chance to get to know each other and to share information” (P3, 27). Six of the 7 participant interviews stayed in residence and found the experience to be very important for connection. This experience also allowed for enriched discussion to occur as described by this participant:

I'd go down the hall and talk to different people about what they were doing, or their experiences or if I had questions. I think it did facilitate the learning process and on the night before everyone went home for the weekend we would have a wine and cheese and we'd all get together and then there would be this enriching discussion...friendships grew from that. (P7, 21)



*Figure 13.* Percentage of students (n=13) who identified availability, usage, and degree of encouragement for use of programs and/or resources in doctoral program.



*Cohort experience.* The cohort experience was valued by all of the participants as an element of the program that enhanced connection among the students. One participant described this experience as:

[C]ollegial, supportive and there was a [feeling] of collective...at the end of [taking early courses] we developed into a very cohesive group, there was a great rapport built...when you came back [together for subsequent courses] there was a sense of a little bit of let-down in that you couldn't repeat what you have built [in the first experience]. (P1, 33)

One of the comments regarding cohort in the open-ended question of the survey stated that “[t]he design of the program with its [cohort arrangement] does provide opportunities for mentoring, collaboration, and sharing of ideas and thoughts among colleagues, so this is an important piece that should be conserved” (P8, 28).

*General feelings.* The value of connections was described by one participant as important for future collaboration: “I think an increasing amount of professional work is collaborative for a lot of people and interdisciplinary...a lot of big grants are going to interdisciplinary work...if you are thinking that you would like to be able to be a player in getting grants, you [had] better pick up some skills in collaboration along the way” (P2, 97). A residence experience and cohort configuration emerged from the qualitative data as elements of the doctoral program which acted to enhance connection between students.

### *Elements of Program that Hindered Connection*

In contrast to the enhancement of connection through the residence experience, one participant felt the residence experience made her want to distance herself, rather than connect:

There is a perception of the fact that we get together in residence provides [connection]. I found that very artificial. I found it made me want to distance myself rather than connect. I found that the forced connection...you will get together, you will live together like a big, happy family...[it is] a very stressful time and...like being on a family holiday, it's not all good...so I didn't find that I formed the firm and fast friendships that I think the program designers anticipated. (P2, 57)

Although opportunities may have been present to form connections, the lack of time to connect appeared often as a hindrance. The questionnaire statement, "Many opportunities were made available early in the program to meet people and form informal relationships" ranked 4 out of 13 ( $M=2.69$ ,  $SD=0.85$ ; see Table 2). One comment regarding the lack of time follows: "[early courses] were so intensive that you didn't have enough time to build that community in some informal times or informal ways" (P5, 99). Another example of the lack of time to connect stated, "I definitely want a sense of community but the pace of the [program] made that difficult in my opinion...I don't feel connected" (P8, 40). Lack of time to connect within the program emerged from the data as a hindrance in terms of connections.

*Challenges Experienced at Beginning of Program*

The qualitative data collected for this subquestion involving programs and resources being organized so as to create connection focused strongly on a theme that was not captured by the quantitative data. While discussing their doctoral program, many (5) of the participants detailed their biggest challenge experienced at the beginning of the program. These challenges were either logistical or personal in nature and are summarized in Figure 14.

For one participant the biggest challenge involved a frustrating experience trying to get a head start on the program:

I knew given the amount of time that [the doctoral program] would take and that I was fitting it into an already busy life, [that] I wanted to be as prepared as possible...I wanted to talk to other people to see what they might say I should do. I had a couple of months and I thought that if I could start reading something or if I could find out about something, so that I would be that much further ahead, what might it be? It was difficult to find someone who would talk to me about it. They gave me great anecdotal kinds of things but now looking back, I think there are definitely things that people could do. It would be great if somebody was in the program and was thinking from the perspective of the student; what might they need to know? And have it organized in a way that is very clear...laid out in a way that is clear and point form and this is what you need to do and these are the dates that you need to do it on. (P4, 25)

Two of the participants indicated that the registration process for the program was confusing and not clearly articulated, which created some anxiety for them. One participant felt:

like you had to go out and find the answer to things and not having been in school for a while things weren't as obvious as they might seem when you are normally a student...I remember having to figure out how to register even and it wasn't clearly articulated...when you would go or how you would fill out the forms...I remember that being tricky to figure out. (P4, 21)

Another logistical challenge for one of the participants focused on information on courses and professors in different streams not being readily available. She commented:

I think that it is better organized for master's students than for PhD students...there are some missing parts in a sense of how it is going to be organized, what kind of courses, who is going to teach...we actually didn't know who [sic] of our professors [were] in which stream, we still don't know that... (P3, 11)

The second grouping of challenges perceived by the participants at the beginning of their program were personal in nature. Learning a new vocabulary and becoming familiar with new authors challenged one participant:

The new vocabulary and being aware of the authors. Not having been brought up in that venue of reading them, being familiar with them, especially the theorists. ... I had to spend a lot of time going over [them], and I still to this day will admit that I'm confused on the nomenclature that they use in

describing an example of a modernist, postmodernist, pragmatist, all these...it really is still mind-numbing... it was a challenge. (P1, 17)

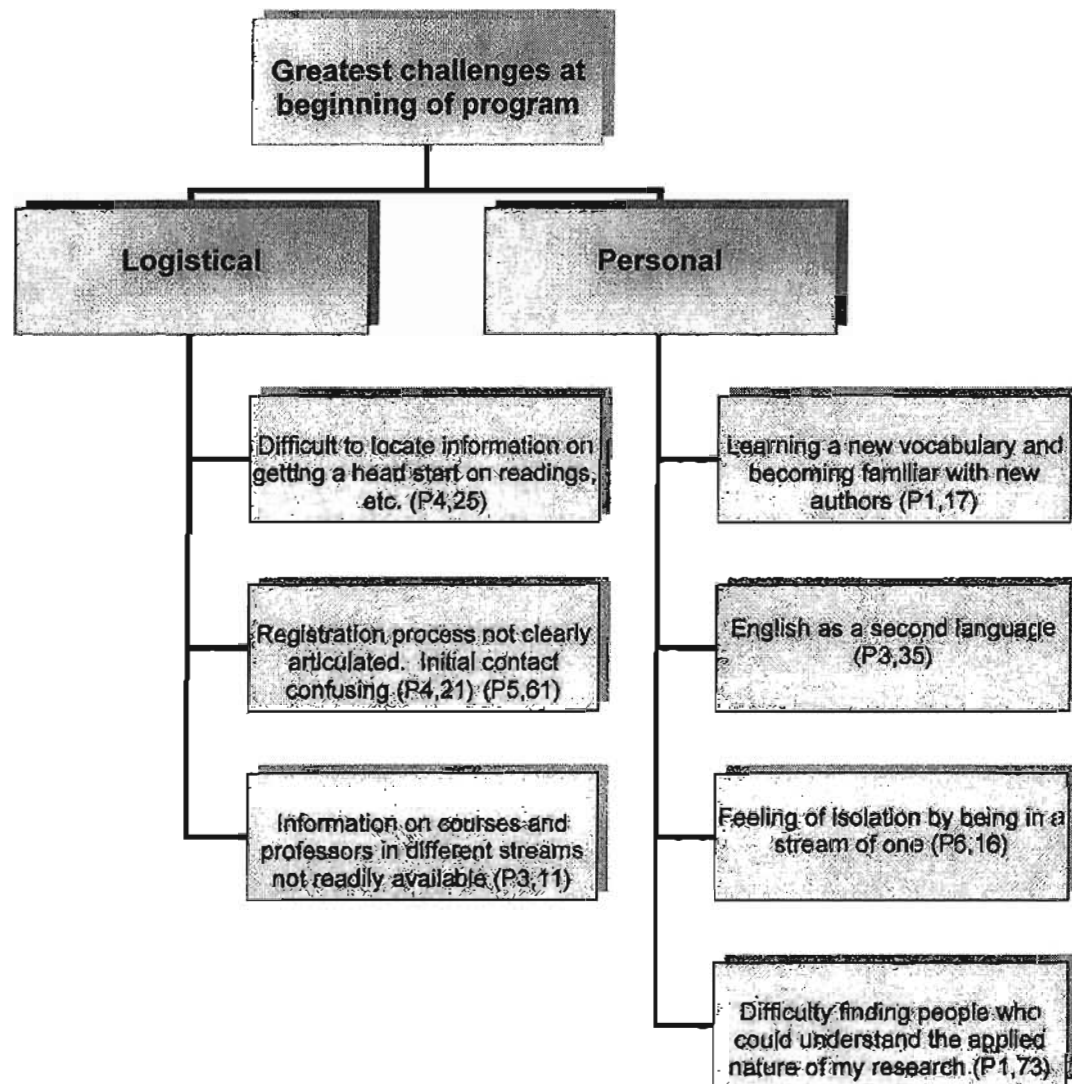
Another personal challenge involving language arose for one of the participants whose first language was not English (P3, 35). A feeling of isolation was experienced by another participant: “my biggest obstacle was [that] the cohort in the summer was wonderful and then in the fall you go off in your stream and for whatever reason, I ended up in a stream of one” (P6, 16). The final personal challenge that emerged from the data involved a participant who found difficulty in finding people who could understand the applied nature of her research:

...one of my bigger challenges was finding people that could comprehend [that] I’m doing educational research...but I’m looking at how it’s going to be truly applied out there rather than leaving it as a stand-alone...this is the building block that moves into the next level of application and transmission and utilization...this area [of applied adult education] is outside of the normal school curriculum in which the majority of the people are familiar...I’m dealing with life-skill adult education, applied education...that’s been a real challenge. (P1,73)

At the beginning of their program participants experienced various challenges, some of which were logistical while others were personal in nature.

#### *Suggestions to Increase Connection Among Doctoral Students Within the Program*

Several of the participants (3) interviewed offered suggestions that they felt would help to increase the degree of connection among doctoral students. One suggestion involved following a model used in executive MBA programs:



*Figure 14.* Organizational chart depicting logistical and personal challenges experienced by participants at the beginning of their doctoral program.

[I]n a program like this, unless you're very close to the university and accessible, you really have to do a lot of co-ordinating to get people back in...somebody will always say they have a conflict...they almost need to have some way to get people together even on a weekend and [explain] that this is part of your program, this is what you have to commit to...like the executive MA programs that exist, where they take their course work but then they say four times a year you are coming in for 2 days [a weekend] and you've agreed to this right from [the beginning]. (P1, 109)

A retreat prior to the commencement of courses was another suggestion to increase the opportunity for students to connect: "...some kind of retreat before people start courses, that would be separate and would introduce you to what this whole thing is about and basic things that you might want to read or know about or answer questions..." (P4, 138). Frequency counts of 0 indicated that an initial retreat was not available to questionnaire participants.

One participant voiced a realization that there is a need to increase connection between students in order to decrease the feelings of being lost; "I wish that I had some really concrete thoughts of simple add-ins to the program because if I were going to characterize the program, or characterize the student experience of the program, I think a lot of people feel quite lost" (P2, 125).

Several weekend programs and an initial retreat are program addition suggestions that emerged from the qualitative data, as ways to increase the degree of connection among doctoral students.

Subquestion 3: Is a “Sense of Community” a  
 Foundational Element in the Formation of Naturally Occurring Relationships Among  
 Doctoral Students?

This subquestion explores the dynamics of informal mentoring relationships. Specifically: (a) when they form, (b) how long they last, (c) how many relationships form, (d) what they look like, and (e) if the presence of a sense of community helps to foster the formation of these relationships.

Quantitative data to explore this subquestion were gathered from 13 questions related to the participants’ experiences with informal mentoring relationships (see Section D2 of the questionnaire; Appendix D). The scale used ranged from: strongly disagree (1), disagree (2), agree, (3) to strongly agree (4). Data from this section were entered into an Excel spreadsheet and frequency counts were tallied to determine the number of participants who agreed or disagreed with each statement. Percentages were computed from the frequency counts. Means and standard deviations were computed on these data and then arranged in rank order; statements that the largest number of participants agreed with arranged at the top of the table with the highest ranking and those statements at the bottom of the table representing ones that a large number of participants disagreed with. (see Table 2). Additionally data related to the number of informal relationships formed were collected from Section D3 of the questionnaire (Appendix D), where participants were asked to indicate the range of the number of relationships they had been or were currently engaged in. The choices of range were: (a) none, (b) 1-3, (c) 4-7, (d) 8-11, (e) 12-15,



and (f) greater than 15. Qualitative data were also collected related to some of the dynamic elements of informal mentoring relationships.

The quantitative and qualitative data for this subquestion will be presented under the subheadings of the aspects of the dynamics of informal mentoring relationships stated above.

*Time Frame of Formation and Longevity of Informal Mentoring Relationships in Doctoral Program*

Figure 15 represents the percent of students who developed informal mentoring relationships at various time periods during their doctoral program. The time periods portrayed correspond to the questionnaire statements related to when these relationships formed; 75% of the participants indicated that their informal mentoring relationships occurred early to midway through the program. Qualitative data were in agreement that relationships tended to form early in the program. Only 1 out of 7 interview participants indicated that he/she had not experienced any informal mentoring relationships. The remaining 6 indicated that they developed relationships some time during the early phase in the program. For some participants (5) relationships began at the beginning of the program, while one participant remarked, “really it wasn’t until we were almost at the [midway point] that you felt you had created some bonds at that point” (P1, 9).

The questionnaire statement: After the midway point my informal mentoring relationships already formed continued, ranked 11 out of 13 ( $M=2.31$ ,  $SD=1.18$ ). Qualitative data echo this feeling that as the program progresses over time

Table 2

*Rank Order, Mean, Standard Deviation, and Number of Responses to Questionnaire Statements Pertaining to Informal Mentoring Relationships in Doctoral Students' Mentoring Experiences*

Rank	Statement	<i>M</i>	<i>SD</i>	<i>N</i>
1	The quality of my educational experience has been enhanced by informal mentoring relationships	2.92	1.12	12
2	Informal mentoring relationships occur naturally for me	2.85	0.55	13
3	I have developed informal mentoring relationships with students from other cohorts	2.77	0.83	13
4	Many opportunities were made available early in the program to meet people and develop informal relationships	2.69	0.85	13
5	Most of my informal mentoring relationships were formed in the first or second year of the program	2.62	1.26	12
6	My informal mentors were peers in my cohort	2.54	0.97	12
7	I consider my informal mentoring relationships to be of high quality	2.54	1.33	12

Table 2 (*continued*)

Rank	Statement	<i>M</i>	<i>SD</i>	<i>N</i>
8	I had the opportunity early in the program to interact with advanced students	2.54	0.88	13
9	I have not had any informal mentoring relationships	2.46	1.05	13
10	I have developed informal mentoring relationships without ever experiencing a “sense of community”	2.46	1.45	11
11	After the midway point my informal mentoring relationships already formed continued	2.31	1.18	11
12	Most of my informal mentoring relationships were formed throughout my entire educational journey	2.08	1.26	12
13	Most of my informal mentoring relationships were formed after the second year of the program	1.23	0.83	11

relationships begin to fade and disappear. One participant describes her experience in the latter stages of the program:

When I started as an undergraduate student I was in a university program that had what they called a class...even though [the class] was big you graduated with those people...you walked all the way through the process [together]...with this [doctoral] program you start out that way [as a class] but once you get your portfolio [completed] everyone is on a different timetable and you lose the connectivity. (P1, 105)

An alumna shares her thoughts on the need for connection to continue after graduation:

I'm an alumna now and really glad that they are saying yes you can still come [to a student support group] because it's a connection...there is a big cavernous hole after you finish...where all these things that you've been attached to are cut...so when you think about peoples' need for connection, it's at the beginning, as they navigate their way through challenges...and then it's at the end where you think...I'm sort of cut off from all those connections. (P2, 13)

Participants indicated that if informal mentoring relationships occurred for them it was during the early phases of the program. Over time these relationships were seen to diminish, although participants expressed a desire to have them continue.

#### *Quantity of Informal Mentoring Relationships Formed*

The quantity of informal mentoring relationships experienced by the participants' are reflected in Figure 16. The data for this graph were collected from

both the questionnaire and interview participants. Those participants who completed both the questionnaire and interview were only included once in the data resulting in 17 responses to the question of quantity. Eighty-two percent of the participants experienced 1-3 informal mentoring relationships and none of the participant had greater than 7.

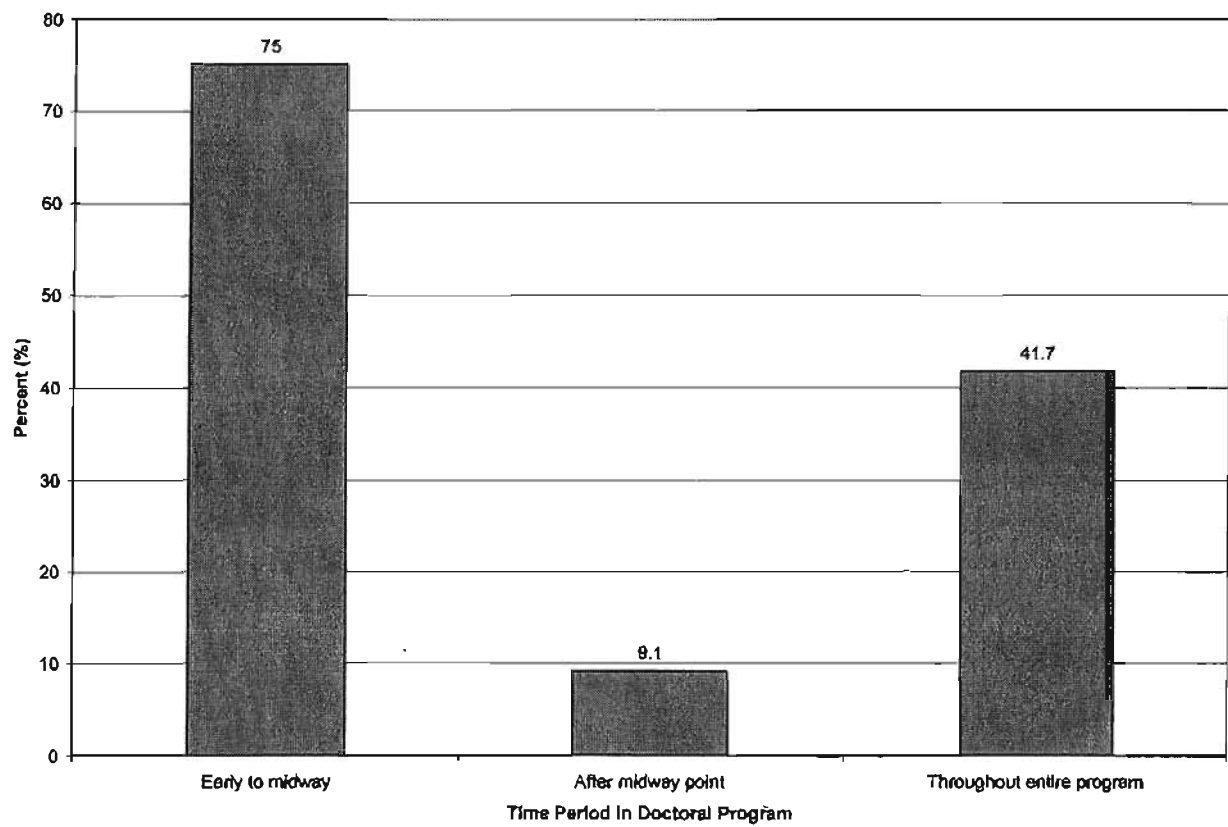
Twelve percent of the participants had never experienced an informal mentoring relationship.

#### *How Informal Mentoring Relationships Begin*

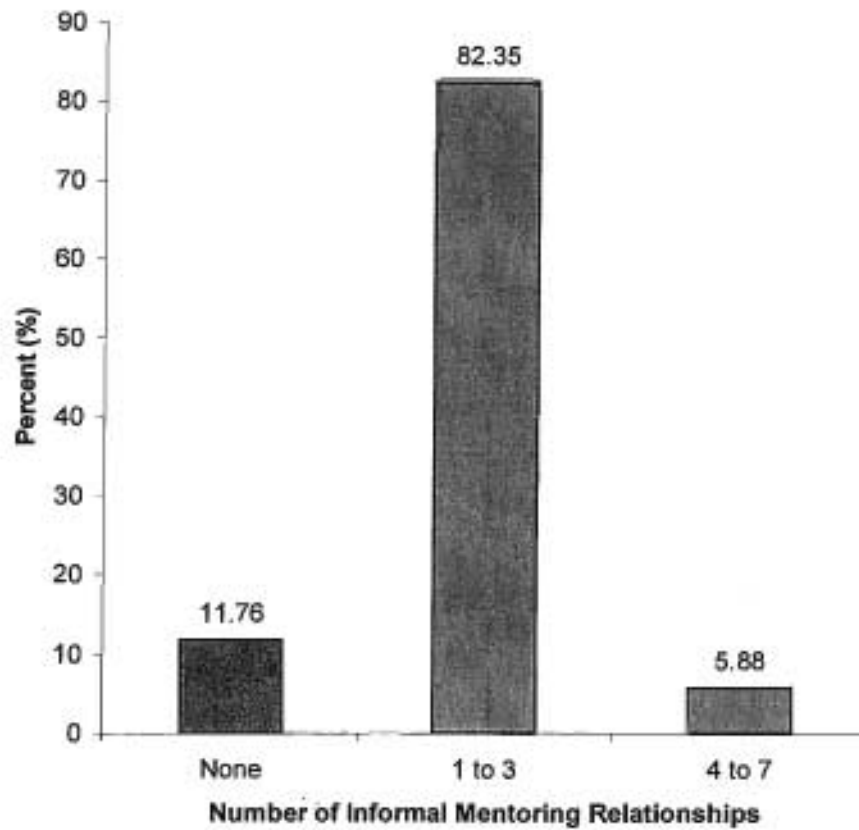
The participants described a variety of ways they felt the impetus to form an informal mentoring relationship begins, which included the following: (a) having a common supervisor, (b) shared perspectives or common ground, (c) similar jobs, (d) physical proximity, (e) need for information, (f) through social contacts, and (g) from the residence experience. Quantitative data were not collected to explore how informal mentoring relationships began between participants.

Relationships were formed with other students for one participant through meetings facilitated by a common supervisor. She stated that

[T]he only reason that I got to know certain people well is because we shared the same supervisor...[w]e met every week or couple of weeks throughout the program...four of us sat down with our supervisor....There were a lot of times he didn't say too much, just sort of smiled and watched the rest of us beat...ideas up and just play with them. (P2, 57)



*Figure 15.* Percentage of students developing informal mentoring relationships during various time periods in doctoral program (n=13).



*Figure 16.* Percentage of doctoral students forming none, 1 to 3, or 4 to 7 informal mentoring relationships (n=17).

Shared perspectives was identified as a spark that caused this participant to “automatically relate” (P4, 102) to another student. This spark initiated an informal mentoring relationship:

[We discovered] that we shared the same sort of perspectives...she would answer things in class that would be the way that I was thinking at the same time...you start thinking...I totally think like that person, I want to talk to them after class...so it wasn't any social event that did it. (P4, 106)

Recognizing shared perspectives or common ground provided the momentum to connect for another participant: “once you had identified your area of specialization you would gravitate to those people” (P1, 9).

Having similar jobs was offered as a commonality that triggered the formation of relationships. For this participant one of the relationships was formed with “a girl who has similar work experience [and] training to me and so we look at things in a similar manner, although our research interests are somewhat different” (P4, 94).

Proximity was another reason suggested for the initiation of informal mentoring relationships:

...this person was around more often so we would have lunch when [she] came on campus for things...we end up talking about what we are doing...we ended up doing a shared presentation together that just came from a conversation that we were having at lunch one day. (P4, 94)

Another example of relationships beginning simply due to proximity follows:

[M]y roommate my first year I didn't know from a hole in the ground, we met the day that we each arrived in residence...and his background was totally



different than mine. His work environment, his social world, his likes, dislikes, we were probably at opposite ends of the spectrum not as negatives, but there's where our worlds were...yet by the end of it there was a chance to talk collectively and interactively and respectfully with one another and socially develop that relationship...that still exists. (P1, 93)

Another participant described the initial connection as a desire to get much needed information: "sometimes a pressing need, a pressing question or need for information...and a connection happens" (P6, 103).

Research participants indicated that informal mentoring relationships formed for a variety of reasons.

#### *Quality of Informal Mentoring Relationships Formed*

The questionnaire statement, "I consider my informal mentoring relationships to be of high quality", ranked 7 out of 13 ( $M=2.54$ ,  $SD=1.33$ ). Qualitative data indicated that for one participant the strength of the relationship increased over time: "I noticed that in the relationships that were formed [early], people immediately entered into them and [they] became a more cemented thing in [later in the program]" (P4, 134). One participant felt that the relationships that formed were too focused on logistical issues and would have been of higher quality if they focused on other students' personal lives:

[T]he amount of time to actually listen to somebody and find out about their personal life...it just never existed for me throughout the whole thing...when we talked it was about how to get around a logistical issue within the program

and what was required of us...so we were always talking about logistical things or talking about what we had done. (P4, 37)

Findings of informal mentoring relationships forming through social contacts and residence experience are presented in later parts of this chapter.

*Formation With or Without a Sense of Community Being Present*

Approximately one half of the questionnaire participants (7 out of 13) agreed that they had developed informal mentoring relationships without ever experiencing a sense of community. Qualitative data specific to this question were not collected.

Subquestion 4: What Educational and Socio-Emotional Benefits are Associated With Informal Mentoring Relationships During the Doctoral Experience?

Successful socialization of graduate students has been previously identified as a critical element for a successful graduate career (Turner & Thompson, 1993) in terms of academic achievement and career development (Boyle & Boice, 1998). Since informal mentoring is only possible through the formation of relationships, a closer look at mentoring relationships became the focus of Section D of the questionnaire (Appendix D). Participants were asked to rate their degree of agreement to 24 statements describing behaviours of informal peer mentor(s) in their mentoring relationships. The scale used ranged from: strongly disagree (1), disagree (2), agree (3), to strongly agree (4). Data from this section were entered into an Excel spreadsheet. Frequency counts were tallied to determine the number of participants who agreed or disagreed with each statement. The frequency counts were then converted into percentages. Means and standard deviations were computed on these data and then arranged in rank order. Statements that the largest number of

participants agreed with are arranged at the top of the table with the highest ranking and those statements at the bottom of the table represent ones that a large number of participants disagreed with (Table 3). The statement that ranked 1 out of 24 with 92% participant agreement was: “Provides emotional support when I need it” ( $M=3.08$ ,  $SD=1.12$ ). Additional high ranking statements included: “Treat my ideas with respect” ( $M=3.00$ ,  $SD=1.29$ ), ranking 2 out of 24 by 83% of participants; “Care about me as a whole person – not just a scholar” ( $M=2.77$ ,  $SD=1.24$ ), ranking 3 out of 24 by 75% of participants; “Have my best interests at heart” ( $M=2.69$ ,  $SD=1.32$ ), ranking 4 out of 24 by 75% of participants and “Provides social support” ( $M=2.62$ ,  $SD=1.04$ ), ranking 5 out of 24 by 75% of participants.

Three main themes emerged from the qualitative data describing benefits that participants perceived associated with informal mentoring relationships. These themes are all connected with the concept of support of different types and were identified as: (a) emotional support, (b) social support, and (c) academic support.

### *Emotional Support*

Aspects of emotional support that participants perceived as benefits to their educational experience are summarized in Figure 17. Two participants described the emotional support they received as a lifeline:

[I]t’s been amazing...there is someone...if that person hadn’t been there on a particular day [midway through the program] for me, I wouldn’t still be here. I wouldn’t have finished, I would have quit that day... (P2, 85)

Table 3

*Rank Order, Mean, Standard Deviation, and Number of Responses to Questionnaire Statements Pertaining to the Behaviour of Informal Peer Mentor(s) in Doctoral Students' Mentoring Experiences*

Rank	Statement	<i>M</i>	<i>SD</i>	<i>N</i>
1	Provides emotional support when I need it	3.08	1.12	12
2	Treats my ideas with respect	3.00	1.29	12
3	Care about me as a whole person – not just a scholar	2.77	1.24	12
4	Have my best interests at heart	2.69	1.32	12
5	Provides social support	2.62	1.04	12
6	Takes an interest in my personal life	2.62	1.12	12
7	Are sensitive to my needs	2.38	1.19	12
8	Aid in the development of my critical thinking	2.38	1.33	12
9	Help to clarify expectations of the program	2.31	1.44	11
10	Are available to me when I need to talk about my program and my progress	2.23	1.09	12
11	Teach me the details of good research practice	2.15	1.28	12
12	Offer support to prevent educational burnout	2.15	1.28	12

Table 3 (*continued*)

Rank	Statement	<i>M</i>	<i>SD</i>	<i>N</i>
13	Are available to me when I need help with my research	2.08	0.95	12
14	Aid in the development of my independent thinking	2.08	1.38	12
15	Serve as informal advisors for course decisions	2.08	1.04	12
16	Teach me survival skills for my discipline	2.00	1.15	12
17	Provide me with information about ongoing research relevant to my work	2.00	0.91	12
18	Share time management strategies	1.92	1.32	12
19	Aid in the development of effective oral communication	1.92	1.26	12
20	Give me regular and constructive feedback on my research	1.92	1.12	12
21	Assist me in writing presentations and/or publications	1.85	1.14	12
22	Help me develop professional relationships with others in the field	1.69	1.11	12
23	Help to navigate the process of registration	1.26	0.95	12
24	Advocate for me with others when necessary	1.62	1.04	12

[Informal mentoring relationships] started within a week of [courses beginning]...it is such an overwhelming start that you either sink or swim and you either connect or not...I don't think that there is a lot of time for indecision (P6, 111).

One of the benefits associated with the emotional support of informal mentoring was that it acted to decrease anxiety. For one participant it was, "anxiety-decreasing...it creates a little bit of work-life balance when you're in a good relationship like that because you get some distances on perspective, often from the other person" (P6, 126).

Informal mentors were also found to be good sounding boards by two participants:

[S]hared need, I think [of] need...either a need for support or a need for sounding board, which is a form of support...I suppose it's a safe thing because [of]...shared circumstance...there are moments in the intensity of [course work] where you really need to blow off or you need to say let's take a walk, I need to clear my head...everyone is facing the same thing...that need to connect for me is very important...[E]ven though I'm self-directed, I like the sense of community, it's important to me. (P6, 118)

[S]he was somewhat [of] a sounding board more than a mentor because of all the challenges and difficulties I've had throughout the program with my supervisor, so, she was someone I could go to unload, because I had a lot of challenges. (P7, 5)

An informal mentoring group was formed by one of the participants in the study. This group was described as a safe place: "I guess when I think about the

nature of some of the questions that people have raised it has been perceived as a safe place to ask questions and get answers” (P2, 77).

One participant offered that “[a] sense of connecting and belonging, that’s important” (P6, 126).

Three of the interview participants felt that having common ground and shared interests provided them with emotional support. Aspects of common ground were described as “shared need” (P6, 118) and “shared interests” (P6, 100). Another participant described an age-related common ground as: “I would say that a few people would find a couple of people who were either close in age to them[selves] and that was a basis of similarity...you already have something in common...” (P4, 37). Area of specialization was also seen as an element of commonality: “once you have identified your area of specialization, you would gravitate to those people [in the same area]” (P1, 9). Similar work experience drew some students together; “one [informal mentoring relationship] is [with] a girl who has similar work experience and training to me and so we look at things in a similar manner, although our research interests are somewhat different” (P4, 94).

Encouragement by peers to build confidence was seen as an emotional benefit of informal mentoring; “I feel very inadequate, or unformed and feel like I’m floundering, yet at times [other students] would ask me questions and I could give answers and they said you know this stuff, you just don’t realize that you understand...you know it and you can explain it...” (P1, 45).

Data from this portion of the study suggest that informal mentoring relationships provided the participants with various forms of emotional support. The

various forms of support identified include: acting as a lifeline, acting to decrease anxiety, acting as a sounding board, providing a safe place to ask questions, offering a sense of connection and belonging, connecting to peers who have common interests and backgrounds, offering encouragement to build confidence.

### *Social Support*

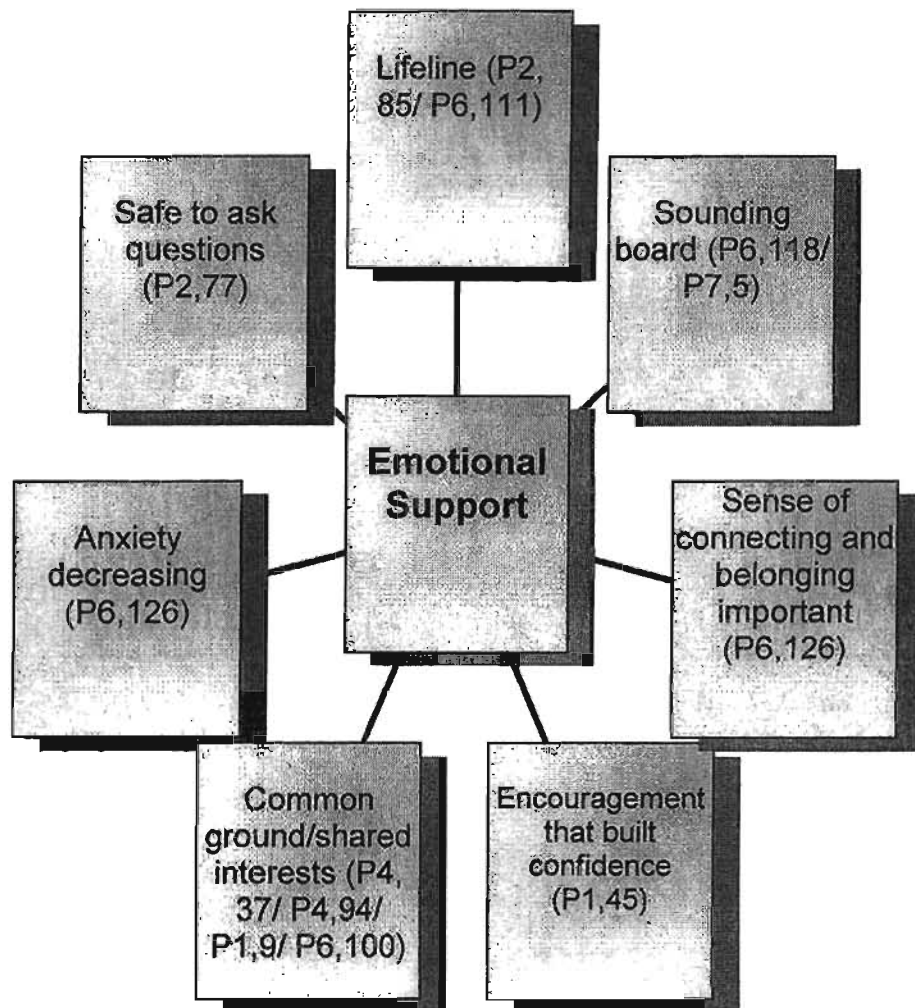
Analysis of the quantitative data ranked social support 5 out of 24 with 75% of participants agreeing that this type of support was a benefit to their educational experience. Social support also emerged from the interview data as a benefit of informal mentoring relationships. When asked how informal mentoring relationships begin to form, one participant commented:

[I]nitially as social contacts...it's like any collective where friendships develop...for me it's through a social friendship, but there was also very much an academic friendship that developed and that's where the mentoring comes in...[what] started out as a social get together evolved and I think that's where you develop [mentoring relationships]. (P1,85)

Informal events were an example of ways that social support could be fostered:

[I]t was a social event that we planned; and a group of us got together and decided to have an informal wine and cheese and get together [to] socialize and get a chance to just unwind and talk... what came out of that was very interesting...through the course of the evening...you wound up talking in small groups, but you didn't stay in one group, there was this transition for you to talk to someone for half an hour collectively and philosophize about





*Figure 17.* Aspects of emotional support perceived by participants to be beneficially derived from informal mentoring relationships.

what you were doing and then [move on to] another group...you weren't into little clique. (P1,85)

Qualitative data suggest that social support may lead to academic support. Informal events help to foster social support and help to facilitate small group discussion.

### *Academic Support*

Aspects of academic support seen by participants to be benefits of informal mentoring relationships are summarized in Figure 18.

A specific statement pertaining to academic support was not available for response by the questionnaire participants. There were 8 statements dealing with academic behaviours of informal mentors available to consider. Data analysis revealed that only 2 of these statements ranked in the top half of the list. They are: "Aid in the development of my critical thinking" ( $M=2.38$ ,  $SD=1.33$ ) ranked 8 out of 24 and "Teach me the details of good research practice" ( $M=2.15$ ,  $SD=0.9$ ) ranked 11 out of 24.

Two student-organized graduate groups were discussed by participants as being significant in supporting students academically. The closeness of relationships within the group was one example that emerged from the data as a benefit that helped students proceed through their program. The group has "helped them do things and move through certain stages" (P2, 33). Another example of how a group can be valuable for academic support was voice by this participant:

[N]ow into my research, [people] talk about the individuality of being out there and sometimes it's hard to stay on track and to get things done because

you're now left alone...there's no one pushing and prodding...when you are with a group there's always the [question] of where are you? And you sort of have to keep up. (P1, 45)

I spoke with another participant who also began a small support group: "I talked to everyone in the program and there are only 12 of us so it was easy. I developed a small support group in that cohort, and it has been very positive. I think we've become friends as well as peers" (P6, 40).

Exposure to differing perspectives was an academic benefit mentioned by two participants:

It provides different perspectives to the one you have and I think what I like about one person in particular who is a good friend and is also in the program, is [that] she asks questions out of left field...I look at her sometimes and think our brains are so completely wired differently...she asks questions sometimes that make me sit up and make me think, I never thought that...that sense of different input and different views, I think that's a great benefit. (P6,126)

We would meet every two weeks as a group...to discuss where we were, what we were doing, how it was going, what our thoughts were...we also did an internal peer review of each other's [work]...it was an opportunity to listen to different perspectives...have them ask me questions to improve my clarity and also for me to read and understand different topic areas that I was not delving into. (P1,45)

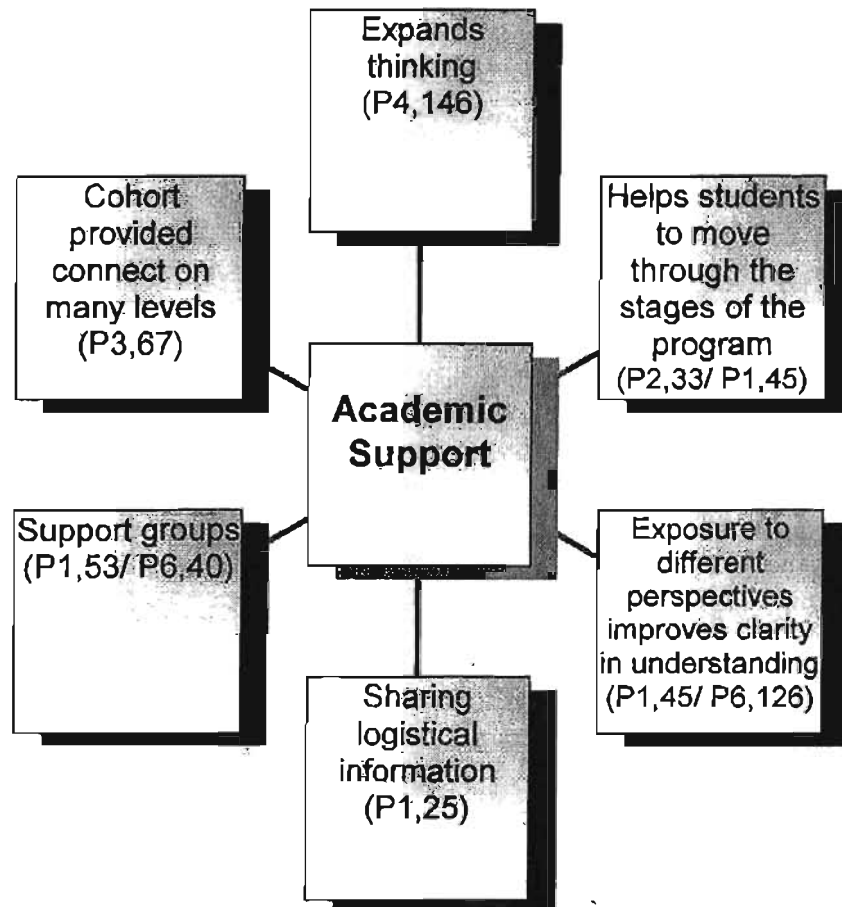
Quantitative data for the statement, “Give me regular and constructive feedback on my research”, ranked close to the middle of Table 3; 11 out 24, with 50% of the participants not agreeing with this statement in terms of their experience.

Expanded thinking was another benefit of academic support presented by a participant: “I think my thinking has been expanded by being with everybody who is different in my group...I have more friendships...the benefit from that is that I wrote a paper with one of them...an interesting experience” (P4, 146). Fifty-eight percent of questionnaire participants responded in agreement to the statement, “Aid in the development of my critical thinking.” This statement ranked 8 out of 24.

The group experience of the cohort was identified by one participant as academically supportive:

We spent a whole month together, learning things that we are all interested in and I learned so much from them...I think that rest of the group shared the same experience. We actually enjoyed each other’s company very much....[T]he program was time-consuming, very intense...I think that we helped each other to overcome everything, just because we connected on so many different levels. (P3, 67)

Connecting to upper-year students was an academic support for one participant: “when I was in [the early phase of the program] people [further into the program] said here’s some good authors, here’s some good things to read, here’s some books that they had brought with them...it was really [helpful]” (P1, 25).



*Figure 18.* Aspects of academic support seen by participants to be benefits of informal mentoring relationships.

### Subquestion 5: Do Doctoral Students Perceive a Change in Their Development as Stewards of Their Discipline Over Time?

Stewardship of a discipline has been suggested as the main purpose of doctoral education (Golde, Walker, & Associates, 2006). The authors maintain that over time doctoral students may develop a set of non-innate qualities, thereby providing the foundation for stewardship. Quantitative and qualitative data were collected to ascertain if doctoral students perceived a change in their perception of the development of stewardship qualities within themselves from the beginning of their program to their current position in the program. The quantitative data provided an opportunity to compare the overall change in development between initial and current students' perceptions of the qualities of stewardship. Three main themes of change been evident from the analysis of qualitative data, which included changes in: (a) feelings that students could be entrusted with the integrity of the discipline, (b) awareness and insight into self, and (c) realization of a moral/ethical component to doctoral education creating purposes which are larger than self.

#### *Comparison of Doctoral Students' Initial and Current Perceptions of Development of Qualities of Stewardship*

Section E of the questionnaire (Appendix D) contained 8 qualities representing feelings, skills, knowledge, behaviours and attitudes associated with stewardship (Golde et al., 2006). First, participants were asked to indicate their current perception of the qualities on a scale ranging from: not at all (1), possibly (2), to definitely (3). Second, participants were asked if their perception of each of the qualities had changed since they started their doctoral studies. The scale for this

section of the questionnaire ranged from: decreased (1), stayed the same (2), to increased (3). Data from the questionnaires were entered into an Excel spreadsheet. The means and standard deviations were calculated for both initial and current perceptions. Frequency counts were also computed to determine how many participants chose each response for initial and current perceptions of qualities of stewardship. Generated means for current perceptions were ranked from highest to lowest in value and means for initial perceptions were sorted to correspond to those of current perceptions. Mean score of both initial and current perceptions were plotted in a bar graph for comparative purposes (see Figure 19). This graph allows for a visual comparison to assess if students perceive change in their development of stewardship qualities.

*Change in Feelings that Students can be Entrusted with the Integrity of the Discipline*

Qualitative data indicated that the change which students perceived in their feelings of being worthy of the entrustment of the integrity of the discipline increased over time. This finding is in agreement with the quantitative data which also depicted a trend of increase in this feeling (see Figure 19), with 9 out of 13 students indicating an increase. One student commented that she was “more aware when I teach of the importance of things...that I wasn’t aware of a year ago” (P6, 146). The concept of being a role model was cited as important in the development of entrustment: “I guess everyone should be a role model...but this is a great opportunity to think what kind of role model you are being” (P4, 189). For another participant this change represented “an entire shift...no longer is it what you are doing in school for [yourself]...now it starts transcending into what you are saying to your neighbour and how you are

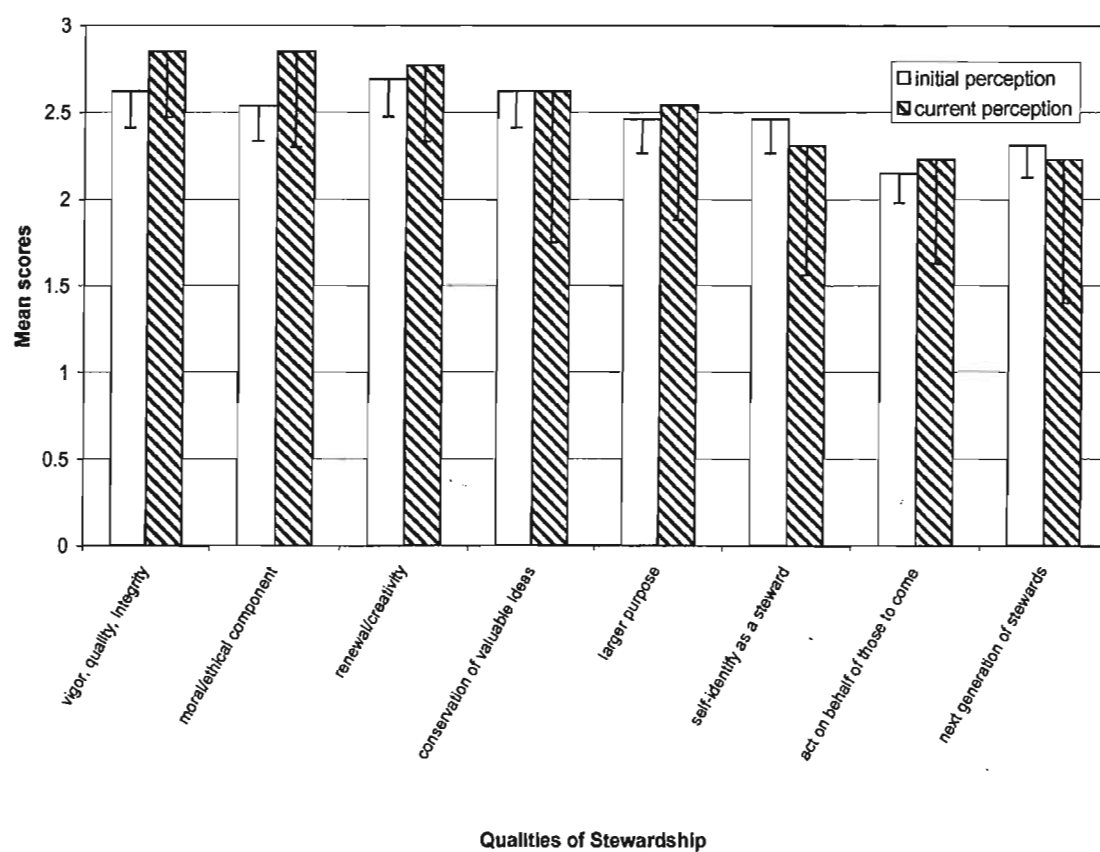


Figure 19. Comparison of doctoral students' initial and current perceptions of development of qualities of stewardship (n=13).



conducting yourself in your job” (P4, 178). The participants described changes in their attitudes and their desire to be seen as role models for their discipline.

### *Awareness and Insights Into Self*

Varied data emerged concerning the stewardship quality of self-identification as a steward of a discipline. The qualitative data ranged from: (a) no exposure to the concept, (b) no identification with the concept, to (c) an increase in awareness of “self as steward” (see Figure 20). The quantitative data indicated that only 46% of the participants currently identified with the concept of “self as steward.” A decreasing trend in the perception of this quality was seen over time (see Figure 20).

An awareness of change in the degree of openness to knowledge emerged also from the qualitative data (see Figure 20). No quantitative data were collected for this insight.

Data from the study suggested that some participants had never been exposed to the concept of stewardship of a discipline and thus could not perceive of themselves as stewards. One interview participant hadn’t “been exposed to this concept [of] stewardship of a discipline at all” (P6, 150). A questionnaire participant wrote in the open-ended question at the conclusion of the instrument, “you asked about a number of things that I had not explicitly thought about. I did not know that there was a term for stewardship of my discipline” (P8, 3). Frequency counts of 2 participants had no current perception of developing the quality of self-identifying as a steward of their discipline.

A lack of identification with the quality of being a steward was also evident from the data. One participant commented, “did some people come to it already

stewards? Maybe. I definitely wasn't" (P7, 69). Another felt that she "[identified herself] as a PhD student, but not a steward of education at this point. I'm still a student [and] I don't feel I'm one carrying it forward" (P1, 65).

A change that emerged from the qualitative data reflected an increase in both awareness and insight that participants recognized within themselves. Several interview participants (3) identified an increase in awareness of themselves as stewards of their discipline. The following quote describes a moment of realization of the stewardship role for a participant:

I don't know that [stewardship has] been an explicit topic of conversation that much. I recall in early courses there was some conversation one day. It was never explicitly stated and I suddenly kind of burst out with...it's just occurred to me that I have this responsibility...I'm very privileged to be here and that I will have a responsibility... (P2, 117) Another example of change in perception of self-identification as steward was described as follows:

...to me a PhD is the ultimate pursuit of knowledge and knowledge has such an influence on how things can be and so [I have to ask myself] how am I going to use this knowledge in a way that is not just for my own good? It has totally shifted my thinking...things I did before were because I was interested in them or because I wanted something to be a certain way, whereas now I feel like as a steward of the discipline I have exposure to things that make it so that I have to think about what's good for everybody... (P4, 178)

For this participant, self-identifying as a steward involved a shift in ways of thinking about issues.

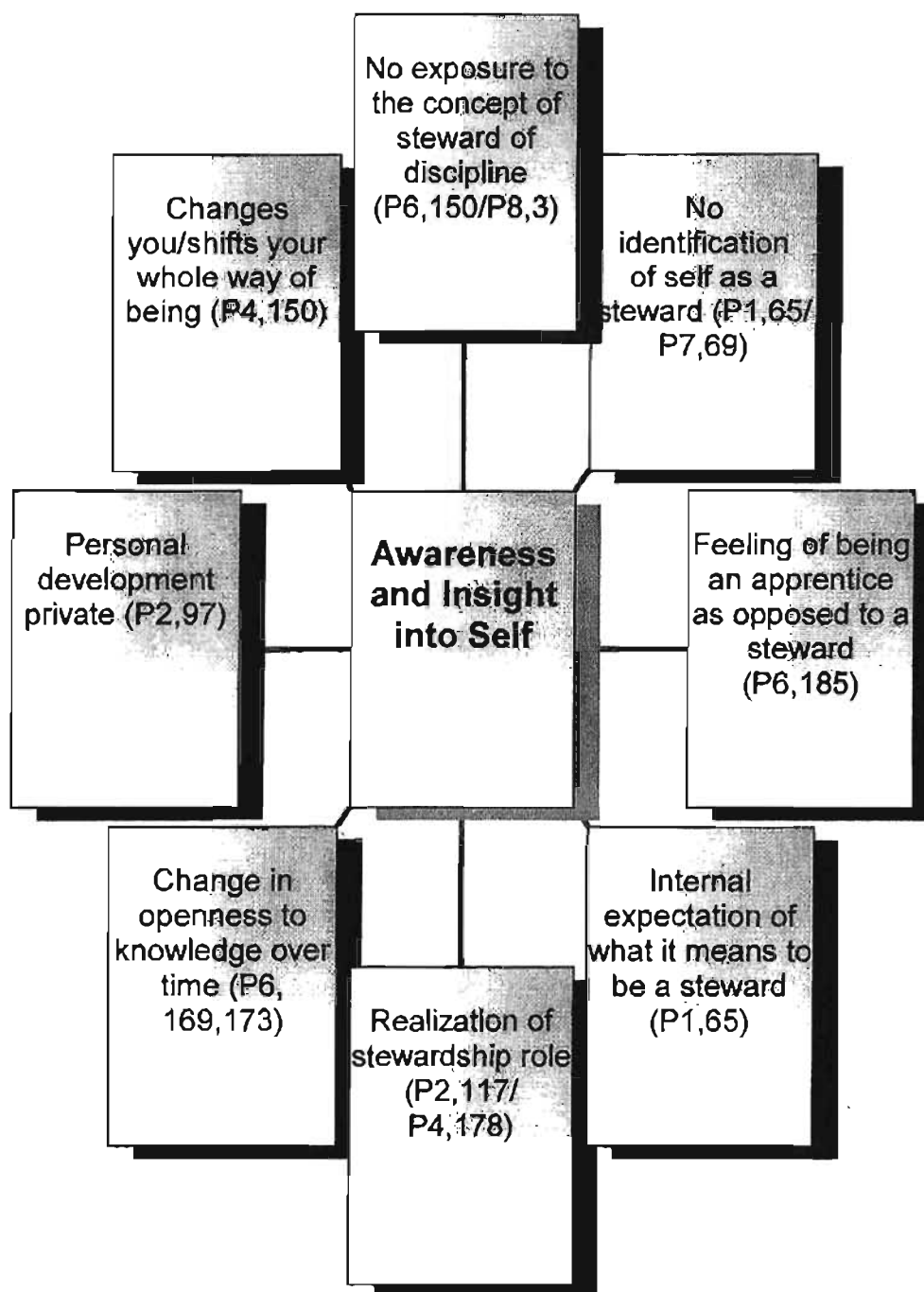
The word “steward” was problematic for several participants because of differing connotations surrounding the word. For example, one participant held a belief that to be a steward she would have to be experienced and at the completion of her program. She would have to “get into [her] data and through the analysis and through the completion of it, then I feel I will have reached that point where I can talk at the level that I feel is expected of me” (P1, 65). Another participant who had completed her second year in the program claimed that she “[felt] like I might be an apprentice right now, not a steward” (P6, 185).

One participant felt that a discussion of awareness and insight into herself, “had been deeply reflective, deeply personal [experience], and not something that I would have shared with anybody else, other than a trusted advisor” (P2, 97).

Over time a change was perceived by one participant in her openness to knowledge. She articulates this feeling as,

I just know that I’m different than I was a year ago. And I know that especially because as I prepare to do my portfolio, one of the tasks is to go back and look at all the stuff you’ve written and see if you can track growth, and when I go back and read some of those articles now....I think, oh my gosh, I get it!...So something happened in that year, my openness to knowledge has changed. I think [that] I didn’t get it a year ago because I really didn’t want to start reading [an author who] had nothing to do with what I was doing...that was my stance at the time. (P6,173)

This change in openness to knowledge was expressed as a powerful insight into this participant’s sense developing qualities of stewardship.



*Figure 20.* Schematic representation of types of awareness and insights into self described by interview participants.

*Change in Perception of the Existence of Moral/Ethical Component to a Doctoral Degree*

The realization that a doctoral degree has a moral/ethical component as well as an educational component tied in first place rank ( $M=2.85$ ,  $SD=0.38$ ) out of 8 qualities associated with stewardship. Ninety-two percent of questionnaire participants indicated that they definitely realized this component existed. Additionally, 9 out of 13 participants perceived an increase in their perception of this moral/ethical component as their doctoral program progressed.

Qualitative data echoed this awareness with specific examples that are illustrative of both perceiving a moral/ethical dimension to doctoral education and also a feeling of a purpose larger than oneself. These data are summarized in Figure 21. For one participant the moral/ethical dimension caused her to “start [asking] questions like: How will this be helpful? Will this serve a greater good? Am I just jumping through a hoop here or am I really going to try to do something in a way that other people or systems benefit?” (P6, 201). Reflection and questioning were mentioned by another participant as an integral part of discussion during a research colloquium course. She went into the course thinking that she would:

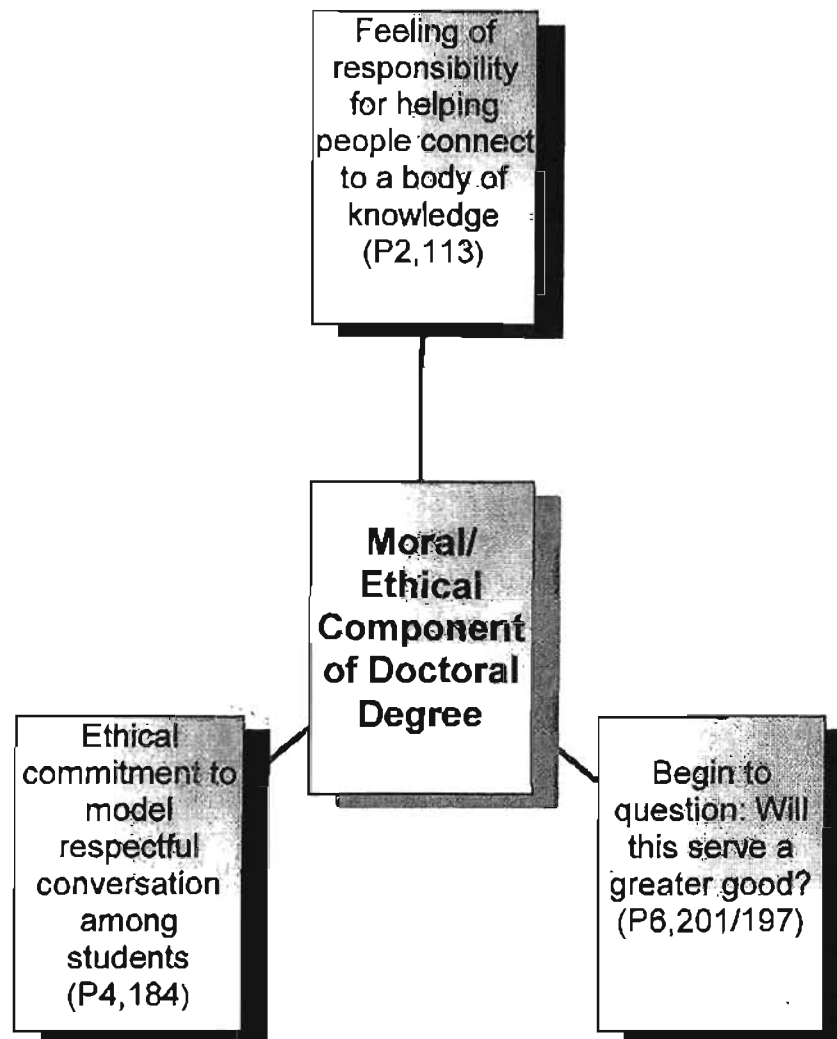
[L]earn how to write [a] dissertation proposal...and it became less about writing the question and lit review and more about what do I need to be a moral researcher...I knew about research ethics...but when you start to put it in relationship to your own research, then the onus becomes very clear...[it] jelled for me. (P6, 197)

The value of helping people emerged from the data as another aspect of the moral/ethical component of doctoral education. One participant valued “the idea that I might be responsible for helping people connect to a body of knowledge, so they could further what they are trying to do” (P2, 113). The final aspect of the moral/ethical component suggested a link to an earlier concept of steward as role model. “I want to include in my portfolio an element that speaks to my ethical commitment to [respectful conversation] and what that means to me. Hoping that other people might look at it and think maybe I should think about that” (P4, 184).

Over time, research participants recognize and perceive an increase in the moral/ethical component of their doctoral education.

#### A Brief Summary of Findings

The participants of this study either completed a 5-section questionnaire (Appendix D) or participated in an in-depth informal but guided interview. Four of the participants participated in both research instruments. In all cases the exploratory mixed method research related to one research question with five subquestions. Chapter 4 presented the findings of this study integrating both qualitative and quantitative data. Keeping the main research question, Do doctoral students feel connected? at the forefront of the study, a picture of the existence and nature of sense of community and insights into informal mentoring relationships began to appear. More specifically data were presented on the following themes that emerged: (a) the presence and absence of sense of community; (b) availability, usage, and encouragement to use resources and/or program within the doctoral program; (c) program elements that enhanced or hindered connection between students;



*Figure 21.* Schematic representation of aspects of a moral/ethical component of doctoral degree as described by interview participants.

(d) logistical and personal challenges encountered by participants early in their doctoral journey; (e) the dynamics of informal mentoring relationships; (f) possible linkage of the development of informal mentoring relationships with a sense of community; (g) emotional, social, and academic benefits of informal mentoring relationships; and (h) perception of change in the development of the qualities of stewardship over time.



## CHAPTER FIVE: SUMMARY, IMPLICATIONS, RECOMMENDATIONS, AND CONCLUSIONS

This chapter begins with a discussion that summarizes the impact of the findings presented in the previous chapter addressing each of the subquestions which have been scaffolding the study. The discussion will be divided into three parts representing the three stages in the transitional process of the graduate journey as described by Schlossberg, Lynch, and Chickering (1989), which focus on: (a) moving into the academic environment, (b) proceeding through the program, and (c) preparing to leave. Throughout the discussion the impact of the findings will be related back to the aim of this study which explores a “sense of community” in doctoral education from the perspective of current and alumni doctoral students. Various implications for and articulations with existing theory will be discussed. The mixed method research design chosen for this study will be discussed in terms of its appropriateness and also insights gained from its use will be presented. Possible impacts of this research on the doctoral participants, the program and doctoral education in general will be discussed. This study shaped me as a researcher and has contributed to my professional development. These impacts will be discussed, followed by a reflective piece written to illustrate how this study ignited my personal growth and development. Based on findings from this study a series of recommendations for both action and future research will be proposed. Lastly, in conclusion, a brief summary of this study will be presented.

### Discussion of Impact of Findings

A discussion of the impact of findings of this study will be presented which incorporates the five subquestions scaffolding this research. The findings associated with the subquestions will be discussed in terms of how they inform the main purpose of this study, which was to explore a “sense of community” in doctoral education from the perspective of current and alumni doctoral students.

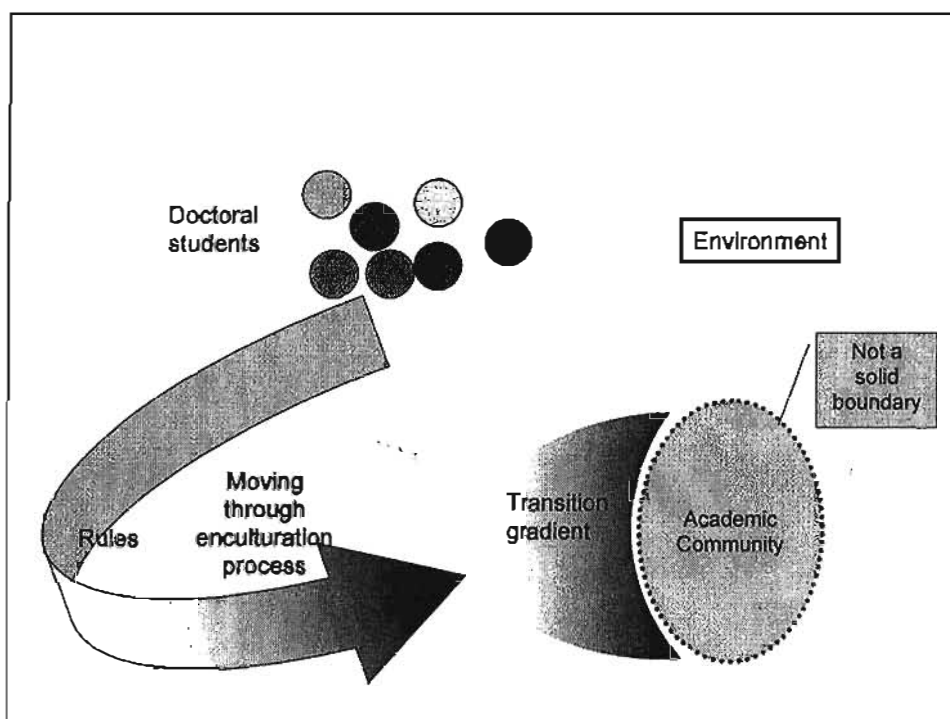
Two different dimensions will be employed to frame this discussion. The first dimension utilizes a portion of the theoretical framework of activity theory suggested by Hopwood and McAlpine (2007) to assist in the understanding of doctoral education; specifically the subject-rules-community segment (see Figure 3).

The second dimension superimposes onto this theoretical framework a metaphor proposed by Wheatley (2007) which likens a group, in this case a group of doctoral students, to a living system as opposed to a fixed structure. The metaphor of a living system will be used to frame the discussion of the findings in this exploratory study as doctoral students’ journey towards the ultimate goal of awarding of a degree. A visual representation of this framework is illustrated in Figure 22.

Incorporating these two dimensions into a single representation will attempt to integrate the findings of the study, while offering a novel depiction of the complex construct of “sense of community.”

#### *A Living System Activity Theory Framework*

The defining characteristic of a living system is its metabolism, the ceaseless flow of energy and matter through a network of chemical reactions, which enables the system to continually generate, repair, and perpetuate itself (Capra, 2008, p. 37).



*Figure 22:* A section of activity theory framework for understanding doctoral education depicted as a living system.

An academic community of doctoral students can also be understood as a networked living system. Instead of a network of chemical reactions mentioned above by Capra, the network of the academic community is one of communication. The network of communication in a social system is where the exchange of information and ideas occur (Capra, 2008). Unlike a biological system which operates “in the realm of matter” (p. 39), a social system “operates in the realm of meaning...generating shared rules of behaviour and a shared body of knowledge” (p. 39). The following sections mirror stages of the doctoral journey and discuss the findings that pertain to this study through the lens of a living system.

#### *Moving into the Academic Environment*

“[T]he transition process extends from the first moment one contemplates returning to school to the time when the experience is complete and integrated into one’s life” (Schlossberg, Lynch, & Chickering, 1989, p.14). The first stage of this transition involves moving into the academic environment. This moving-in stage where students first enter graduate school has been termed “enculturation” or “cultural learning” (Boyle & Boice, 1998, p. 87) and is shaped by academic and social interactions between students, staff and faculty in the department (Tinto, 1987). I begin with taking a closer look at the doctoral students themselves who participated in this study and have begun the transitional process.

#### *Doctoral Students as Participants*

The demographics of the participants in this study were diverse. This is in accord with Isaac, Pruitt-Logan, and Upcraft’s (1995) work which accredits an increase in doctoral student diversity to an increase in graduate education growth over

the last 30 years. Research participants differed in their: (a) stage in the program, (3 from first 2 years and 13 beyond this stage), (b) registration status (3 full-time and 13 part-time), (c) academic backgrounds (traditional and non traditional), (d) marital status, (e) family status (i.e., children or no children), (f) wide range of ages, (g) past professional experience, and (h) gender (3 males and 10 females). In addition to differences in life stage, educational background, and professional experience, the participants also differed remarkably in their personal dispositions.

Weidman, Twale, and Stein (2001) claim that “despite similarities between them...no two graduate students experience graduate school in quite the same way” (p.v). Findings indicated that participants varied in the degree of involvement, in terms of both time and effort, that they were willing to devote to activities.

Additionally, participants varied in their perspectives of the individual or collective nature of a doctoral journey. Both of these dispositional factors will be expanded upon in later sections of this chapter.

### *Environment*

One characteristic of a living system is that it interacts with its environment (Lars, 2005). If one likens a community of doctoral students to a single cell, it can be readily understood that a cell would not exist in isolation within a living system but would be immersed within an environment. This external cellular environment would support the system by providing crucial factors that would impact the maintenance, growth, and survival of the cell. The environment that a community of doctoral students is immersed in is equally important for the health, maintenance, and growth of the community. Gardner and Barnes (2007) have found that the culture and

context that doctoral students are positioned in, [which in effect is their environment] can have a great impact on their socialization.

The practices and procedures of an academic department can affect the enculturation process (Van Maanen & Schein, 1979) and contribute to the environment that the doctoral students transition through. One of the subquestions in this study focuses on how the elements of the doctoral program are organized and if they contribute to the desired state of connection between students.

From data analysis, a continuum of departmental practices and procedures emerged, anchored by elements that enhanced connection at one end and hindered connection at the other. Participants felt that experiences which involved getting to know each other and sharing information, such as residence and cohort experiences, helped to enhance connection between students. These findings agree with Boyle and Boice's (1998) work which states that any practice that fosters collegiality among first-year students acts to facilitate the enculturation process.

The availability of departmental practices/resources and being encouraged to use them is only part of an equation that leads to connection among participants. The degree of involvement in terms of time and effort on the part of the participant is also a limiting factor. The most underutilized resource available to participants was a university-wide orientation for graduate students (see Figure 14). This finding concurs with Golde's (2005) work, which states that "the department, rather than the institution as a whole, is the locus of control for doctoral students" (p. 671). Although only 30% of the participants knew that a graduate student handbook for the University was available, it was also underutilized, possibly for the same reason as

stated above. A graduate student center is an ideal physical location for students to meet, but results from the questionnaire indicate that only 30% of the participants were aware of its existence. Surprisingly this facility was used by less than 10% of the participants. It is possible that the facility was seen as an empty room lacking purpose. Doctoral students tend to become involved when their involvement is directed and purposeful (Gardner & Barnes, 2007).

Not surprisingly the two resources that were known and used by 90% participants were the graduate program handbook and the graduate newsletter.

An oversight to the design of this section of the questionnaire was specifying faculty as the segment of the department responsible for offering encouragement to the participants to become involved in available resources or programs. From Figure 14 it can be seen that the percentage of students who felt encouraged to participate in available programs is low. If peers and support staff had been included into those who could possibly have influenced involvement, the data may have led to an increase for this section of the question.

A major hindrance to students connecting to one another was perceived by the participants to be a lack of time to connect, although opportunities may have been present. The intense pace of the program was offered as the main factor limiting the amount of time available for students to connect with each other. "How can we really have time for relationships on top of everything else we have to do? I say that caring is not done on top of everything else, it's just the other way around. Caring is the foundation for teaching and learning" (Noddings, 2004, p. 92). The statement that students and faculty care about each other ranked 1 of 12, indicating that this

important behaviour was experienced. This statement was poorly worded however as it could be interpreted two different ways: (a) that students care about each other and that students and faculty reciprocally care about each other or (b) that students and faculty reciprocally care about each other. Although the feeling of caring exists, participants describe feelings of being lost and isolated as a result of their lack of time to connect.

### *Academic Community Boundary*

Another characteristic of a living system is the exchange of energy across a system's boundary (Lars, 2005). The boundary of this academic community, as depicted in Figure 23 as a broken line, represents an open and flexible area; a place of meeting and exchange of information and ideas, rather than being a self-protective wall (Wheatley, 2007). "Boundaries in living systems are the place where relationships take form, an important place of exchange and growth as one individual chooses to respond to another" (p. 48). Information and ideas are exchanged in networks of communication operating in the realm of meaning between individuals (Capra, 2008). The relationship of interest for this study is an informal mentoring relationship. Key findings of this study indicate that the quality of the doctoral educational experience is enhanced by informal mentoring relationships (ranked 1 of 13) and that these relationships formed in a natural manner (ranked 2 of 13) without being arranged by an independent party. Figure 23 represents a proposed visualization of the academic community boundary.



## Academic Community Boundary

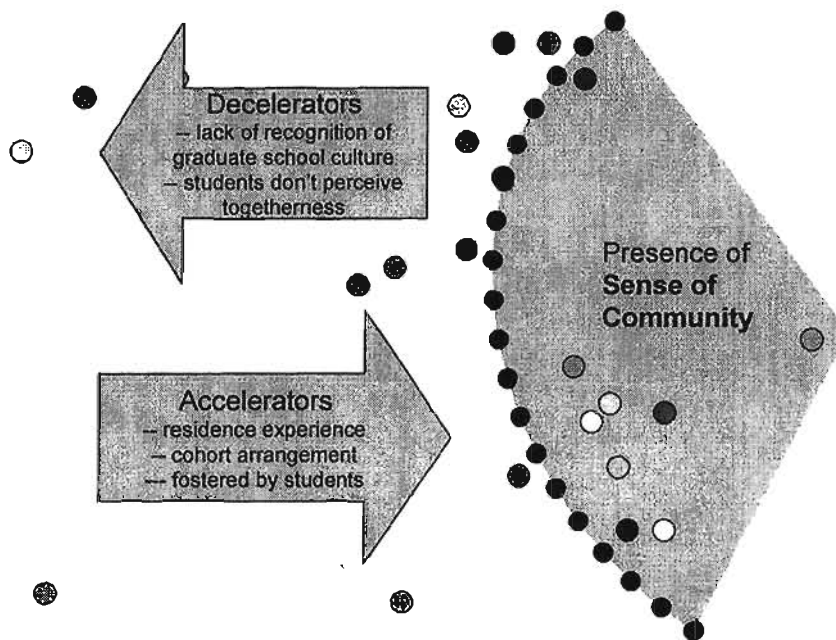


Figure 23. Close-up visualization of the academic community boundary.

### *How Informal Mentoring Relationships Begin*

Mullen (2005) found that informal mentoring relationships often begin in situations where students are grouped together. This arrangement increases the number of exposures students have to one another, thereby increasing the potential for informal mentoring relationships to form. Finding from this study parallel Mullen's but also add a personal dimension to the understanding of how these relationships are initiated. A group format in situations such as: (a) social events, (b) cohort arrangement, (c) residence experience, and (d) meetings facilitated by a common supervisor were found to be reasons that relationships began to form. The sparks that initiated relationships for the participants were described as: (a) hearing shared perspectives, (b) realizing that common ground existed, (c) sharing similar work experiences, (d) physical proximity, and (e) a strong desire to acquire information. The whole process of socialization "becomes a continuum of experiences, with some experiences being commonly and uniformly felt by students and others perceived differently by students with different characteristics" (Weidman, Twale, & Stein, 2001, p. 5). The diversity of participants' natures coupled with opportunities to connect were found to impact the formation of informal mentoring relationships.

### *Time Frame of Formation and Longevity of Informal Mentoring Relationships*

The formation of informal mentoring relationships was found to occur early in the doctoral program by the participants. The majority of the participants (75%) felt that relationships occurred during the first 2 years. Only 42% of these participants realized additional informal relationships forming throughout the entirety of their

program. Specific characteristics such as when informal mentoring relationships occur are important “in the understanding of dynamics of graduate programs” (Weidman, Twale, & Stein, 2001, p. 11). These authors describe the developmental nature of the socialization process, where the degree of socialization increases over time. One of the findings that emerged from this study revealed that, although informal mentoring relationships were formed early in the program as time progressed, these relationships began to fade and often disappeared completely. The result of this lack of development was described by those experiencing it as a loss of connectivity. The participants who experienced this loss expressed a strong desire to have the relationships continue throughout the duration of the program and beyond graduation. Since the interaction of graduate students with each other has been linked to successful academic achievement and career development (Boyle & Boice, 1998) and described as a critical element for a successful graduate career (Turner & Thompson, 1993), the impact of disappearing informal mentoring relationships could conceivably negatively affect the participants’ success.

*Impact of Experiencing a Sense of Community on the Formation of Informal Mentoring Relationships*

Approximately one half of the participants agreed that they have developed informal mentoring relationships without ever experiencing a sense of community. This finding will be discussed in the next section of this chapter.

### *Benefits and Outcomes of Informal Mentoring Relationships*

In biological systems molecules are continuously exchanged in networks of chemical reactions. Similarly, exchanges occur in social systems, but the exchange involves a network of information and ideas as opposed to molecules (Capra, 2008). Networks of communication are self-generating: “each communication creates thought and meaning which gives rise to further communication and thus the entire network generates itself” (p. 38). Being connected to this network of communication allows for informal mentoring relationships to naturally form. Data from this study indicate that the quality of the participants’ educational experience is enhanced by connections involving informal mentoring relationships (ranked 1 of 13) and that the formation of these relationships occurred in a natural manner (ranked 2 of 13). What these communication networks generate though is usually non-material and is often “difficult to put a name to that intangible that travelers [of the doctoral journey] give to each other” (Regan, 1994, p.139).

Many of the “intangible” benefits of informal mentoring relationships experienced by the participants were elucidated by this study. The overarching benefit was found to be support for the participants during their doctoral experience. Specifically, informal mentoring relationships provided emotional support (ranked 1 of 24), social support (ranked 5 of 24), and academic support. Emotional support was often described in terms of a lifeline to help survive the anxieties and uncertainties of the doctoral journey. By connecting with others participants found: (a) a safe place to ask questions, (b) a person who would listen, (c) a sense of connection and belonging, (d) others with common interests and backgrounds, (e) others who cared about them

not just as a scholar but as a whole person, (f) someone who had their best interests at heart, and (g) encouragement from others which resulted in an increase in confidence. These findings mirror those of Mullen's (2003) described for a group of doctoral students involved in a WIT program previously discussed. Unlike Mullen's work, the study participants ranked those statements pertaining to the technical skills associated with the research process very low, indicating that these were not benefits they had experienced.

Findings indicated that social support often led to academic support for the participants. Informal social events were described as venues for small group discussion to be initiated. Benefits and outcomes associated with social/educational support included: (a) an increase in exposure to differing perspectives, (b) expansion of thinking, (c) connecting to upper-year students, and (d) helping students to move through the stages of the program. These findings are similar to those found by Weidman, Twale, and Stein (2001) who state that "informal socialization [has been found] to help [doctoral students] to survive the formal structure" (p. 7).

#### *Advancement Through the Program*

Any definition of "sense of community," including the one used in this study, tries to describe a construct that is invisible. As previously stated, for the purpose of this study a sense of community is defined as "a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that member's needs will be met through their commitment to be together" (McMillan & Chavis, 1986, p. 4). The invisibility of this construct however does not equate with emptiness. Wheatley (2006) suggests that invisible fields exist

in space, similar to those fields familiar to everyone, such as gravitational and electromagnetic fields. Although these fields are invisible, their effects can be observed. Ideas can be thought of as invisible fields; “[i]t’s the ideas of a business that are controlling, not some manager with authority...creating the field through the dissemination of those ideas is essential” (Wheatley, 2006, p. 55). Building on this concept, I would suggest that the idea of “sense of community” may indeed be thought of as an invisible field in the doctoral journey. A field “must reach all corners of the organization, involve everyone and be available everywhere” (p. 55). This invisible field may not have reached all corners of the doctoral community which would explain the fact that approximately one half of participants stated that they had developed informal mentoring relationships without ever having experienced a sense of community. In essence, this study explores the effects of an invisible field, a sense of community, on the doctoral students’ journey from their perspective.

An important subquestion scaffolding this research addresses whether or not doctoral students perceive that a sense of community exists in their program and if so, to what extent. The continuum of existence of a sense of community ranges from present at one end to absent at the other end. For 77% of the participants, a sense of community was perceived to exist in their doctoral program. Data suggest that the aspects of the program which physically brought students together, such as a cohort arrangement and residence experience, helped to foster a sense of community. Both of these aspects of the program can be considered to be accelerators or catalysts in the movement on the continuum toward the pole representing the presence of sense of

community. This finding parallels the research of Twale and Kochan (2000) who found that “student cohorts develop as a community having a social and emotional identification, cohesiveness and connectedness” (p. 14).

Additionally, data suggest that a sense of community can be fostered by doctoral students themselves with a desire to help create this community.

Towards the absence of sense of community end of the continuum lays the perception of the remaining 23% of the participants. Data suggest that although a sense of belonging was perceived by some participants to exist for a cohort arrangement, this sense of belonging did not extend to feeling like they were part of a department. Golde (1998) lists a feeling of being integrated into a department as one of four important socialization tasks that needs to take place early in the graduate journey. A lack of recognition of the existence of a graduate school culture was suggested as a key reason for a feeling of not belonging. Palmer (2000) states that “the degree to which a person yearns for community is directly related to the memory of his or her last experience of it” (p. 1). For the participants who did not experience a sense of community, it is not clear from the findings if the absence was a result of the participants not seeking community or if they were seeking it and never found it.

### *Preparing to Leave*

The final stage in the graduate journey has been coined the “preparing to leave” stage (Schlossberg, Lynch, & Chickering, 1989). In order for a doctoral student to reach this point in the journey that have “succeed[ed] in [his/her] new environment...learn[ed] not only to cope with the academic demands but also to recognize values, attitudes and subtle nuances reflected by faculty and peers in their

academic programs” (Weidman, Twale, & Stein, 2001, p. 2). It is at this junction of the intellectual and the moral/ethical that both conferment of a degree and stewardship reside. An illustration of this concept is presented in Figure 6 in Chapter 2. The impact of the findings related to the sub-question: Do doctoral students perceive a change in their development as stewards of their discipline over time? will be discussed in this section.

Only one of the participants for this study was an alumnus and able to reflect on the entire “preparing to leave” stage of the journey. Remaining participants were at various points along the doctoral journey; between progressing through the program and into the early to middle portion of the preparing to leave stage. The participants’ responses to changes in their perception of the qualities that comprise stewardship from when they started the program to the present are summarized in Figure 19 of Chapter 4.

Over time participants perceived an increase in perception of the following stewardship qualities: (a) I feel that I can be entrusted with the vigour, quality and integrity of the discipline, (b) concerned with fostering renewal and creativity in the generation of new knowledge, (c) think to the future and act on behalf of those students yet to come, (d) I feel a purpose in what I am doing that is larger than myself, and (e) realize that a doctoral degree has a moral/ethical component, as well as an educational component. This represents an increase in 5 of the 8 qualities of stewardship offered in the questionnaire.

The most confusing finding was in response to the quality; I self-identify as a steward of my discipline. There was an overall decrease in perception of this quality



over time reflected in the quantitative data, yet an increase in perception reflected in the qualitative data. It appears that this quality statement may have needed the clarification of the term “steward” available to interview participants, which was unavailable to questionnaire participants.

### Implications

In this section I discuss the findings in terms of implications for existing theory. Additionally, how the findings articulate with existing theory as well as with larger theoretical issues is discussed.

#### *Implications for and Articulation with Existing Theory*

The findings from this study align with Vygotsky’s (1931, as cited in Crain, 2000) theory that there are two lines of development within a learner; a natural line and a social-historical line. The natural line represents the personal development and learning that occurs within students as they progress through their doctoral program. Findings suggest that participants recognized shifts in perception, growth, and change within themselves as they transitioned through their program. For some there was an increased awareness of the value and dynamics of being involved in informal mentoring relationships and experiencing a sense of belonging to a group. A sense of their personal level of commitment and involvement to programming and resources is reflectively considered by the participants. Other changes expressed included: (a) wanting to be seen as a role model, (b) an increase in their openness to knowledge, (c) realization of the existence of a stewardship role as a doctoral student, (d) an increase in perception of change within themselves in terms of their development of the qualities associated with stewardship.

The social-historical line of development represents the doctoral students' growth in terms of forces from without providing intellectual and non-intellectual support. This involves their relationships with others as part of a community of scholars. Slightly over three-quarters of the participants experienced a sense of community with others. This feeling of belonging was found to be fostered by specific program elements of a cohort arrangement and residence experience, as well as by the students themselves.

This study also supports the web-like activity system purposed by Hopwood and McAlpine (2007) as an aid in understanding the doctoral student experience (see Figure 3). The authors have identified the "spokes" on the web and have added double-pointed arrows indicating relationships within the complex web. This study goes one step further however and attempts to add an additional dimension to this activity theory framework by using an overlay of a living system. This adds a dynamic element to a structure which appears somewhat rigid. By considering the journey of the doctoral student through the lens of a living system, the movement and adaptive processes involved in the journey are highlighted. Instead of focusing on the parts, "look instead for patterns of movement over time and focus on qualities like: rhythm, flow, direction and shape" (Wheatley, 2007, p. 43). The participants' experiences from this study have helped to elucidate the transitional process from initial acceptance into the program through conferment of degree.

#### *Articulation with Larger Theoretical Issues*

In this section the findings are discussed in terms of how they articulate with larger theoretical issues. The issues considered include relationships of: (a)

individual to others, (b) individual to Self, and (c) individual to community as a whole.

### *Relationship of Individual to Others*

The overarching issue at the heart of this study is connection or alternatively disconnect of people to one another. Jensen (1995) claims that in higher education today a clear model of connection between people has “not been fixed in our thinking” (p. 12). A model, in this context, is a representation of proposed structure. The vagueness of a model ironically is what makes one so influential (Jensen, 1995).

*Models of relationship.* Two different relationship models exist in higher education with respect to how individuals relate to one another. The first model has been called the Autonomous Self Model “which places great emphasis on separation, individual autonomy, privacy, fragmentation and self sufficiency” (Jensen, 1995, p. 12). This model of “insistent individualist” (p. 13) has, according to Jensen, been converted in the minds of some scholars into an “image of a rugged individualist” (p. 13). Gardner (1976) describes the “toxic joys” (p. 15) associated with this model as attractors that may lead people in this direction. For example, selfishness, self-indulgence, and self-pity can lead to multiple rewards and be deeply satisfying for some. This model can involve the Self winning at the expense of others and values action over reflection. The Autonomous Self model inhibits people from working together and also inhibits the generation of creative thought that can arise from people thinking together (Gardner, 1976). A fundamental source of suffering in peoples’ lives has been attributed to a feeling of isolation (Lalande & Laverty, 2007). Academic isolation is also one of the key factors associated with both increasing

attrition rates in doctoral education as well as increased time to degree completion (Golde, 2000; Lovitts, 2001).

A second model coined the Relational Model “emphasizes connectedness, collegiality and attention to the common good” (Jensen, 1995, p. 12). This model values what comes from being open to others, as opposed to being independent from others. The relational model “presupposes self-confidence in one’s worth, but insists this worth is not only reinforced but expanded and perhaps even transformed by the diversity of experience represented by others” (p. 24). At the heart of this study is an exploratory method to ascertain if doctoral students have a relational model of education fixed in their minds and if they feel a connection to one another. Roth and Lee (2007) state that “collectivity provides opportunities that are beyond the reach of the solo efforts of individuals” (p. 195). The findings from this study support this statement as new perspectives and understandings were gained by those participants in informal mentoring relationships with one another. Having the time to have conversations of significance was identified as one of the key factors hampering connection for the participants.

#### *Relationship of Individual to Self*

In *Educating for Humanity: Rethinking the Purposes of Education*, Mike Seymour (2004) states that “the separation of people from their deeper selves underlies all other forms of disconnection. Being disconnected from oneself hampers true connection to others...” (p. 11). Based on this idea, I would suggest that the deeper we delve into our own story seeking understanding, the less disconnected we

feel from others. It is my opinion that through reflection we can begin to identify common ground and realize our connectedness with others.

### *Relationship of Individual to Community as a Whole*

In *Good Work: When Excellence and Ethics Meet*, Gardner, Csikszentmihalyi and Damon (2001) define the concept of good work as “whatever advances development by supporting the fulfillment of individual potentialities while simultaneously contributing to the harmonious growth of other individuals and groups” (p. 244). The findings of this study show a growing awareness on the part of participants to recognize a moral/ethical component to their education. The focus seems to be shift from looking only within to looking beyond themselves to the community of scholars who are sharing their journey. This awareness resulted in: (a) feeling responsible for helping other people connect to a body of knowledge, (b) an ethical commitment to model respectful conversation, and (c) reflection and questioning to address the question, Will this serve a greater good?

### *Impact of Methodology*

This research marks my inaugural involvement with mixed method research design. Both qualitative and quantitative research techniques were combined into a single study in an attempt to explore a “sense of community” in doctoral education from the perspective of current and alumni students. The quantitative element of the study involved a questionnaire, while the qualitative portion involved both face-to-face interviews and an open-ended question at the end of the questionnaire. The qualitative and quantitative components of the study were equally weighted in terms of emphasis, and data generated were collected for both components during the same

time frame. Data analysis and interpretation for both the qualitative and quantitative aspects of the study also occurred during a single time frame.

A mixed method research design proved to be a good choice of design for this exploratory study. Data were captured in both the qualitative and quantitative portions of the study which would have been missed if either methodology were used on its own. The following section provides examples of data which may have been missed if a mixed method research design had not been employed.

Themes arising solely from data captured in the qualitative portion of the study include the following: (a) elements of the program which have enhanced student connection, (b) value of connections important for future collaboration, (c) suggestions and strategies to increase connection between students, (d) challenges experienced at beginning of program, (e) how informal mentoring relationships began, (f) academic support as an impact of informal mentoring relationships, and (g) an awareness of change in the degree of openness to knowledge.

Quantitative data captured that participants perceive a great deal of care between students and faculty in their program. Additionally, qualitative data alone implied that some participants had developed informal mentoring relationships without ever experiencing a sense of community.

The validation of data across both qualitative and quantitative components was evident throughout the analysis. The concurrent sequencing of the qualitative and quantitative elements of the study allowed for equal focus, analysis, and interpretation. There were times during the data analysis stage of the study when a question would arise in my mind from the questionnaire that I wished I had the

opportunity to discuss with my interview participants. Early in the data analysis stage, I felt that the questionnaire should have been administered first and the data from the questionnaire analyzed prior to the interviews. On the other hand, if the study had been designed in a sequential fashion, I feel that I would have directed the interviews much more and would possibly have missed rich data. Now that the data analysis is complete, I feel that concurrent nature of the design lent itself well to the exploratory nature of the study thereby providing a more complete portrait in terms of the depth and breadth of doctoral students' experience.

The most significant problem that I encountered while collecting data for this study was the very low response rate from potential participants. It was a surprise to me that doctoral students, for whatever reasons, would choose not to participate in a study that was focused on their experiences in a program that they were a part of and one that had a significant impact on their lives. It was encouraging as a researcher, however, to hear that those who did participate felt that the topic was important and that it should be studied. If I were to undertake a study in the future with a similar design, I would attempt to include more than one study site in an attempt to reach more potential participants and thus increase the number of participants.

Another difficulty encountered during the data collection phase was preconceived ideas that participants held regarding the terminology used in the study. During interviews I was asked several times by participants to clarify the meaning of terms being used, especially the concepts of informal mentoring and stewardship. Participants seemed to hold personal views of these terms and were having difficulty bringing their understanding of these terms and my definitions together in their

minds. Often I would clarify the definition of informal mentoring only to have the participant begin to describe a mentoring experience that was “formal” in nature. Clarification of terms was only available to those participating in face-to-face interviews. There is a possibility that although the terms were clearly stated at the beginning of the questionnaire, those participating in the survey may have misinterpreted some of the statements.

A decision was made early in the design of the questionnaire to eliminate a neutral “no opinion” response category based on the assumption that all of the participants would have an opinion on the survey items and that a forced choice was justified. One participant commented, “as for the design of the survey, I often am one of those participants that goes for the neutral answer on a 5-point Likert scale. You made this impossible [which is a] good idea for the fence-sitters” (P8, 2). Participants who decided that they could not answer an item choose to leave that item response blank. The forced choice of response categories created more work in the data analysis section of project as the number of responses for each question had to be carefully checked, but eliminated the problem of participants not thinking long enough about a difficult survey item and choosing the easy, middle of the road response category.

I would encourage researchers to consider adopting a concurrently sequenced, mixed method research design if their research is exploratory in nature. This choice of research design has proven to be effective in both capturing and validating data in the exploration into doctoral students’ sense of community and its influence on the formation of informal mentoring relationships.



### Impact on Practice

This section will discuss the impacts that this research may have on various aspects of the educational system. It will be outlined using a metaphor previously presented in the literature review, one that resonated with me immediately because of my interest and background in the art of spinning. The metaphor begins with a thread which, when magnified, reveals separate strands which can be further magnified to reveal individual fibers (Roth & Lee, 2007). For the purposes of this discussion, a thread represents doctoral education, a strand represents a doctoral program and a fiber an individual doctoral student. This metaphor helped to further my understanding of the impacts of this research by prompting me to zoom in and out while thinking about this topic.

#### *Impact on Doctoral Student Participants - the Individual Fibers*

Participating in this study provided an opportunity for participants to reflect on their experiences while pursuing a doctoral degree. The stewardship section of the questionnaire was mentioned in particular as a section of the survey that not only prompted reflection but also provided a topic for participants to consider that was unique to some. One participant commented, "Very interesting survey. You asked about a number of things that I had not explicitly thought about. I did not know that there was a term for stewardship of my discipline" (P8, 1). This perception of a research instrument prompting new avenues of thought was echoed by the doctoral students who participated in the pilot study for the questionnaire also.

In-depth face-to-face interviews offered an opportunity for participants to identify their personal and logistical hurdles in the program and offer suggestions for

ways others might overcome or avoid these challenges. Not only did this interview process give participants the opportunity to tell their story but also provided a means to express ideas and suggestions for the betterment of the program.

### *Impact on Doctoral Program - A Strand*

I would anticipate that the findings from this study would provide significant feedback of doctoral students' experiences to the program designers. This study does not attempt in any way to be evaluative of the program, but instead seeks to explore and discover the individual experience as it relates to sense of community and informal mentoring relationships in doctoral education.

The following is a brief summary of findings that relate to participants' perception of the doctoral program itself. More detailed information related to these findings can be found in Chapter 4.

Program elements that enhanced connection between students were identified as both the residence experience and cohort arrangement. The major element which hampered connection was the lack of time to connect due to the fast pace of the program. Seventy-seven percent of participants experienced a sense of community in the program, while the remaining 23% did not. Two reasons identified as contributing toward the lack of sense of community were: (a) that students themselves didn't perceive togetherness and (b) lack of recognition of a graduate student culture.

Informal mentoring relationships were described as beginning for participants in the following ways: (a) having a common supervisor, (b) realizing shared perspectives or common ground, (c) having similar professional backgrounds, (d) physical proximity of students to one another, (e) a pressing need for information, (f)

through social contacts, (g) through the residence experience, and (h) through cohort arrangement. The majority of the participants (82%) experienced one to three informal mentoring relationships. The early portion of the program was the most likely time for these relationships to begin. As the program progress, however, these relationships began to fade and disappear although there was a desire for them to continue.

The major benefit of informal mentoring relationships was found to be support of three different types; emotional, social, and academic. As a result of these relationships participants described the following benefits: (a) decrease in anxiety, (b) having someone who would listen, (c) a sense of connecting and belonging, (d) encouragement which increased confidence, (e) social and academic support, (f) initiation of small group discussion, (g) exposure to differing perspectives, and (h) expanded thinking.

As the participants advanced through the program, an overall general trend was perceived reflecting an increase in the development of qualities associated with stewardship.

#### *Impact on Doctoral Education - A Thread*

Daresh and Playko (1995) have suggested three key questions for professional students to ask of themselves and be able to answer at the end of their education.

The questions are as follows:

- (1) What do I do with the skills I have learned?
- (2) What am I supposed to look like and act like in my professional field?
- (3) What do I as a professional look like to other professionals as I perform my

new roles?

(as cited in Weidman et al., 2001, p.6).

It would seem probable that greater connection among doctoral students could result in an increase in both discussion and reflection. This in turn could result in questions dealing with their professional role being addressed. Gardner, Csikszentmihalyi and Damon (2001) state that “a continuing integration is called for between professional skills and a person’s sense of character...which can take a lifetime [to achieve]” (p.246). At the interface of these skills and character is where stewardship resides. The authors stress that the “moral milieu of graduate school” (p. 246) is extremely important as formative experiences in an atmosphere where “good work” is in abundance will go a long way towards graduate students “getting the message” (p. 246). Since 54% of the participants in this study had no identification with the concept of steward of a discipline and 2 of 13 had never heard of the concept, it would seem reasonable that doctoral education needs to address this issue.

In addition this study adds to the current literature on sense of community, informal mentoring relationships and stewardship in doctoral education.

#### Professional and Personal Impact of this Study

All of the components of study, such as the design, implementation, analysis, and interpretation of data have been shaped by my perspectives. My past experiences, interests, and values have influenced this research process. In response to this influence, the research itself has affected, changed, and contributed to my thinking in terms of my: (a) role as researcher, (b) professional development, and (c)

personal growth and development. This reflexivity between my self as researcher and the research process will be discussed in this section.

### *Impact on Role as Researcher*

As a novice researcher in mixed method research, I have now gained first-hand experience with this research paradigm. This section will highlight how this research has impacted my role of researcher.

I have developed a greater understanding, as a result of this research, of the challenges involved in the recruitment process of participants. The reluctance of participants to become involved, for whatever reasons, was truly surprising. Another unexpected development occurred when member checks of the interviews were returned with rich experiences deleted because the participants were fearful of being identified through their words. These two events beg the question: Why are doctoral students afraid to share their experiences? Wheatley (1992) asks a similar question: “Why would we avoid participation and worry only about its risks, when we need more and more eyes to evoke reality?” (p. 73). As a researcher, this experience has created a personal awareness that this reluctance and fear needs to be addressed, in order to create an environment which welcomes the learners’ voice.

### *Contributions to Professional Development*

I have experienced a change during this research process in both my perspective and understanding of “sense of community”. This change is explained fully in the next section of this chapter.

As a result of this research I have developed a greater awareness of the importance of providing time and space to facilitate the formation of informal mentoring relationships and for sense of community to establish.

Participants have left a lasting impression on me also of the need for people to be involved in the design process of any group.

Findings that informal mentoring relationships formed for the most part early in the program has prompted me to bring the first year students in my program together a few times in their first year. If we do lose students from our program it is during their first year, where students are in large classes and may not have connected with others from the program. Increasing the availability to connect may decrease the attrition rate.

Another contribution from this study involves a re-focusing on the journey of students with a greater emphasis now on the process.

### *Personal Growth and Development*

In *The Courage to Teach*, Parker Palmer (2000) discusses the importance of reflection and examination of the inner life of educators. He encourages teachers to not only examine the “what”, “how” and “why” of teaching but to also ask the more difficult question of “who” is the self that teaches? “Good teaching comes from the identity and integrity of the teacher” (p.11). The following piece reflects my personal growth and development ignited by this research process.

### *A personal journey towards a bridge across the divide*

Since the beginning of my Masters of Education degree, I have had a feeling of being divided between two disciplines; with one foot in the world of education and

the other foot in the scientific world. Discussions with others about this feeling have usually ended with the well intended suggestion that my professional life involves science education, so a divide didn't really exist. But I felt it. At times this suggestion seemed to work as I gradually incorporated new educational elements that I had learned from course work into my teaching. For a short time the success of the new technique or strategy reduced the feeling, but as all conditions of the spirit, it slowly returned.

While interviewing a participant for this study our conversation visited this divide as common ground between us. The suggestion was made to keep thinking and reflecting and that in time the divide might be closed by something that would encompass both disciplines. This informal mentoring experience was brief, but had a profound impact on the direction of my thinking. Throughout this study I have taken notes of thoughts and reflections that were focused on alleviating this divided feeling.

The bridge across my personal divide began to form through my readings and the research process itself, with the interviews having the largest impact. As I read and re-read the interviews, it became clearly evident to me that the issues and experiences associated with the doctoral journey were not unique to the discipline of education. They were the same experiences that I was hearing informally in my workplace from graduate students in biology and biotechnology. I began to think that perhaps some of these experiences were "universal" to graduate students, which was confirmed to some extent through my readings.

At this point in the journey, I had a strong feeling that I was heading in the right direction. The two disciplines that make up my professional setting began to

seem less separate as entities in my mind, as they became tentatively joined by a single thread of common experiences.

It was many months later before another piece of the illusive bridge began to form. During a re-reading of Margaret Wheatley's, *Leadership and the New Science*, I gained a clearer understanding of the complexity of groups or communities of people, when viewed through the author's lens of a living system. As I worked through this new framework with my data, a greater understanding of the complexity of this "living system" of doctoral education became apparent.

In-depth reading into complexity theory lead me to an insight that allowed me to place one foot on the newly forming bridge across the "divide". As my comprehension of complex systems grew, I realized that my divide was being caused and maintained by the strong analytical side of my thinking, which was keeping the worlds of education and science, each with their own unique culture, clearly separate. The type of thinking that evokes a cause-effect, or an either-or reaction to things is second nature to me well entrenched by years of higher learning in the sciences. A shift in perspective was however beginning to form.

As this study unfolded, I realized that analysis of data for my original pilot study dealing with sense of community was rudimentary. At the time I was looking for a two-dimensional understanding of the relationship between sense of community and informal mentoring relationships. I have experienced a change during this research process in both my perspective and understanding of "sense of community." My initial perspective has evolved into a viewpoint that envisions both sense of



community and informal mentoring as critical parts of a complex web that seeks to understand the doctoral student experience.

My understanding of the composition of sense of community in education has also evolved during this study from a construct involving a group of students to one that encompasses not only a group of students knowing, caring and helping each other, but also a continually developing awareness on the part of each student towards greater self-knowledge. This new image of sense of community included both the group and the individual.

Prior to this study, my understanding was that a sense of community could be created simply by putting the phrase 'if you build it, they will come' into action. Sheer effort in terms of organization and facilitation would result in its development. Through this research process, however, I have come to understand Palmer's (2000) words, "community may or may not happen, may or may not be received, may or may not have consequences that we like...even as we act to evoke community, we must remember that community itself is a gift to be received, not a goal to be achieved" (p.136). This shift in perspective has only been possible because my understanding of its nature and creation has deepened.

Bridging this personal divide offers a new direction; one that focuses attention on the graduate student experience in an attempt to enhance the journey. One might ask: How can you see yourself doing this in your current professional role of advisor and laboratory instructor in an undergraduate program? I am encouraged by a slogan for an organization called Friends of the Earth which suggests that people should think globally, and act locally. I am encouraged that my daily encounters with

graduate student teaching assistants will provide them with not only an opportunity to expand their teaching and technical skills, but also an opportunity if they so desire to reflect on their experiences. Each small interaction at a single program level has the potential to have far reaching effects on the entire complex system of graduate education. I am encouraged by Wheatley's (2006) metaphor of envisioning oneself as a broadcaster,

...a tall radio beacon of information, pulsing out messages everywhere...

We need all of us out there, stating, clarifying, discussing, modeling, filling all of space with the messages we care about. If we do that, fields develop and with them, their wondrous capacity to bring energy into form" ( p.56).

The field will be one of sense of community and the energy will form into relationships to enhance and support the graduate journey.

The significance of this study in terms of personal growth and development has been a pivotal by-product that will influence the future direction of my life as teacher/researcher. I have come to understand that I have been and will continue to be a guide on the graduate journey enhancing the quality of student experience.

#### Recommendations for action

Short/medium- and long-term recommendations will be proposed based on the findings of this study. For each of the recommendations an anticipated impact will be offered as well as a probable cost of the recommendation in terms of resources. The aim of the following recommendations is to further enhance the doctoral students' experience.

### *Short/Medium-Term Recommendations for Action*

- (1) Include snapshots of doctoral students on the Education website. Possibly include: photograph, research topic, areas of interest. Since informal mentoring relationships were found to be formed when students realized a shared perspective or common ground, this short-term action might increase the likelihood of connection. This action would also project the feeling that a graduate culture is recognized. Requires minimum cost as the website is active and would require a single person to upload the information.
- (2) Provide a feedback mechanism which would afford regular opportunities for doctoral students to voice their experiences. This action could provide a conduit for information distribution in two directions between students and the department. Student experiences could inform program development. This action would require some organization but would incur a minimum cost.
- (3) Engage former and existing students in conversation together. This could be facilitated as an open forum (round table discussion) and would require little organization.

### *Long-Term Recommendations for Action*

- (1) The doctoral journey can be envisioned as an upward moving spiral. A long-term recommendation could be to create a curriculum focused on ethical/moral issues encountered in doctoral education and beyond that mirrors this spiral journey. A double-stranded spiral could now be envisioned. This would infuse doctoral education with professional and ethic norms and would move ethics from the “hoped for by product” category to the forefront of study. The action would require

significant planning and development by the program designers. It would also take the faculty involved to be committed to a similar vision for doctoral education.

(2) Implement Zachary's (2005) suggestion to work to create a culture that both supports and advances multiple types of mentoring opportunities, not solely formal mentoring. This could be accomplished by providing information to doctoral students on how informal mentoring works and what can be expected. This recommendation would require a commitment and perhaps a change in perspective on the part of the faculty to promote the value of informal mentoring.

### Recommendations for Future Research

This study has revealed a variety of areas that could potentially warrant further study. The novel portrayal of activity theory seen through the lens of a living system could provide a starting point for researchers to develop. The following research questions identify some of those areas:

#### *Informal Mentoring Relationships*

- 1) Does a relationship exist between informal mentoring relationships and the practice of reflective thought?
- 2) How could the value of informal mentoring relationships be taught and understood within the doctoral curriculum?

#### *Doctoral Programming*

- 1) What changes would have to be made in order for the focus of doctoral education to be placed on achieving the desired outcome of successful completion of the program by every student registered?
- 2) How could doctoral education curriculum be revised to emphasize a

ethical/moral component as an intellectual content?

- 3) What is the capacity of the program to facilitate energy flow in the form of information?
- 4) What would a mentor/guide on the PhD journey “be” like?
- 5) How could people be taught to be mentors/guides?

#### *Sense of Community*

- 1) For those doctoral students who did not perceive a sense of community, was that because of choice or because the “field” of sense of community had not reached them?
- 2) To what extent does personality determine involvement in the construct of sense of community?
- 3) How do student support groups continue when the founders graduate?

#### *Stewardship*

- 1) Could a correlation exist between the formation of a sense of community and the development of qualities of stewardship?

#### Conclusion

This exploratory mixed method study was an attempt to expand upon two dynamic processes in doctoral education; sense of community and informal mentoring relationships, from the perspective of current and alumni doctoral students. The main purpose behind its design was to elucidate the non-intellectual aspects of student learning that help to support the diverse landscape of doctoral education.

Findings from the study indicate that the presence of both sense of community and informal mentoring were found to enhance the overall quality of doctoral

students' experiences. The dynamics of the informal mentoring process were identified. Doctoral program elements that enhanced or hindered connection were identified. When opportunities presented themselves for students to connect with each other, informal mentoring occurred naturally, providing emotional, social, and academic support. Key themes emerging from the data indicate that by experiencing these two constructs students found the support they needed to help them to navigate the complex terrain of doctoral education carrying heavy baggage. For the participants this baggage was identified in terms of logistical and personal challenges. Participants perceived changes over time in their development of the qualities associated with stewardship.

This study has brought the "hoped-for by-products" associated with doctoral education from a background position to the forefront of inquiry. The two major constructs under study can be better understood as processes as a result of this research, "...where process is allowed its varied-tempo dance, where structures come and go as they support the process that needs to occur, and where form arises to support the necessary relationships" (Wheatley, 2007, p. 68). This study has allowed for a clearer portrait to be painted of the doctoral students' journey, sharply defining the images of two dynamic processes that act to support the doctoral traveler, namely, sense of community and informal mentoring relationships.

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## Appendix A

Table A1. 15 Principles of Questionnaire Construction

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Number	Principle
1	Make sure the questionnaire items match your research objectives.
2	Understand your research participants.
3	Use natural and familiar language.
4	Write items that are clear, precise, and relatively short.
5	Do not use “leading” or “loaded” questions.
6	Avoid double-barreled questions.
7	Avoid double negatives.
8	Determine whether an open-ended or closed ended question is needed.
9	Use mutually exclusive and exhaustive response categories for closed-ended questions.
10	Consider the different types of response categories available for closed-ended questionnaire items.
11	Use multiple items to measure abstract constructs.
12	Consider using multiple methods when measuring abstract constructs.
13	Use caution if you reverse the wording in some of the items to prevent response sets.
14	Develop a questionnaire that is easy for the participants to use.
15	Always pilot test your questionnaire.

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*Note.* Adapted from Johnson, B., & Christensen, L. (2004). *Educational research:*

*Quantitative, qualitative, and mixed approaches.* Boston: Pearson Education.

## Appendix B.

### Interview Guide

#### **SECTION A: RESOURCE OR PROGRAM**

What resources or programs were available to you as a beginning doctoral student?

Which of the above resources or programs did you participate in?

How much time was set aside in your program outline of “Summer Session 1” and “Summer Session 2” for students to connect and interact informally?

What was the most difficult barrier or obstacle that you had to overcome at the beginning of your studies?

#### **SECTION B: A SENSE OF COMMUNITY**

**Sense of community** means “a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that member’s needs will be met through their commitment to be together” (McMillan & Chavis, 1986).

McMillan, D. W. & Chavis, D. M. (1986). Sense of community: A definition and theory. *American Journal of Community Psychology*, 14 (1), 6-23.

In your department:

How would you describe the relationship that graduate students have with faculty?

How would you describe the relationship that graduate students have with each other?

What words can you think of that would best describe the atmosphere within your doctoral program?

What style(s) of learning best describes your experience?

How would you describe your feelings and/or experiences of being part of an educational cohort (i.e. students who started the program at the same time)?

Are the members of your cohort a diverse group of people in terms of their educational and socioeconomic background? How has this diversity affected/impacted your educational journey?

#### **SECTION C: BACKGROUND INFORMATION**

When did you begin your doctoral program?

Are you a part time or full time student?

How would you describe your academic background? (Traditional student, non-traditional student)

How would you describe your present life stage? (Marital status, no children, dependent children)

When were you born?

#### **SECTION D: INFORMAL MENTORING RELATIONSHIPS**

**Informal mentoring relationship** means “a mentor-protégé arrangement that is spontaneous and self-directed, not managed, structured or officially recognized” (Mullen, 2005).

Mullen, C. A. (2005). *Mentorship primer*. New York, NY: Peter Lang Publ.

How would you describe the way in which most of your informal mentoring relationships began?

At what point in the program did most of your informal mentoring relationships form?

What factors would you attribute to the formation of informal mentoring relationships?

Who did you form relationships with?

How would you describe the benefits of informal mentor relationships that you have experienced as a doctoral student in terms of being mentored?

How would you describe the benefits of informal mentor relationships that you have experienced as a doctoral student in terms of acting as a mentor?

How many informal mentoring relationships make up your personal mentoring mosaic, from the beginning of your program to the present?

(a) none (b) 0-3 (c) 4-7 (d) 8-11 (e) 12-15 (f) greater than 15

#### **SECTION E: DEVELOPMENT AS A STEWARD OF YOUR DISCIPLINE**

**Steward of a discipline** means “someone who will creatively generate new knowledge, critically conserve valuable and useful ideas, and responsibly transform those understandings through writing, teaching, and application” (Golde, Walker, & Assoc., 2006).

Golde, C. M., Walker, G. E. & Associates (2006). *Envisioning the future of doctoral education: Preparing stewards of the discipline*. San Francisco, CA: Jossey-Bass.

Stewardship of a discipline has been suggested as the main purpose of doctoral education. Stewards of a discipline develop a certain set of qualities over time.

Do you feel that you have (a) not yet begun to, (b) begun to, or (c) have already developed the following qualities in your development as a steward of your discipline?

(a) I feel that I can be entrusted with the vigor, quality and integrity of the discipline. How has your perception of this quality changed since you began your doctoral program?

(b) Critically conserve valuable and useful ideas. How has your perception of this quality changed since you began your doctoral program?

(c) Concerned with fostering renewal and creativity in the generation of new knowledge. How has your perception of this quality changed since you began your program?

(d) Think to the future and act on behalf of those students yet to come? How has your perception of this quality changed since you began your doctoral program?

(e) I self-identify as a steward of my discipline? How has your perception of this quality changed since you began your doctoral program?

(f) I feel a purpose in what I am doing that is larger than myself. How has your perception of this quality changed since you began your doctoral program?

(g) Realize that a doctoral degree has a moral/ethical component, as well as an educational component. How has your perception of this quality changed since you began your doctoral program?

(h) Concerned with the preparation of the next generation of stewards. How has your perception of this quality changed since you began your doctoral program?

## **SECTION F: REFLECTION**

Recall an incident(s) pertaining to “sense of community” and/or an informal peer mentoring relationship that you have experienced during your doctoral educational journey. Describe it in as much detail as possible.

Do you have any other comments on your doctoral education experience that I may not have asked you about?

## Appendix C.

### Telephone Script

Hello. This is Gail Higenell calling and I would like to begin by thanking you for agreeing to participate in this telephone interview. Your comments on your experiences of “sense of community” thus far in your doctoral studies are extremely significant to this research project. May I have your permission to tape record our conversation so that I can focus on listening to your story instead of notetaking? I will be the only person who will listen to the recording.

I plan on asking you a few questions and if you would like to have any of them repeated please ask me.

*Proceed with Interview Guide (Appendix C)*

Appendix D  
Questionnaire





## Questionnaire on Doctoral Education

Thank you for agreeing to participate in my research. This survey instrument takes about 30 minutes to complete.

All answers are strictly confidential. Your responses will be identified only by a random three digit code number which will **not be connected** to your name or email address.

### Instructions:

- Answer the questions frankly and to the best of your ability.
- To answer the questions on the electronic version of the questionnaire place an X over the number representing your choice.
- We invite you to elaborate on any answers by writing comments at the space provided at the end of the questionnaire.
- Use the definitions in the glossary below when answering the questions.
- For the electronic version of the questionnaire: Please **save** your completed questionnaire to your desktop and then send it back as an email attachment.

If you have any questions or concerns, please contact Gail Higenell (905 688-5550 ext.4718), [ghigenel@brocku.ca](mailto:ghigenel@brocku.ca)

### GLOSSARY OF TERMS:

- **Doctoral program** means your current program at your current university.
- **Sense of community** means “a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that member’s needs will be met through their commitment to be together”.<sup>1</sup>
- **Research** means the research and scholarship related to your own dissertation.
- **Informal mentoring relationship** means “a mentor-protégé arrangement that is spontaneous and self-directed, not managed, structured or officially recognized”.<sup>2</sup>
- **Steward of a discipline** means “someone who will creatively generate new knowledge, critically conserve valuable and useful ideas, and responsibly transform those understandings through writing, teaching, and application.”<sup>3</sup>

<sup>1</sup> McMillan, D. W. & Chavis, D. M. (1986). Sense of community: A definition and theory. *American Journal of Community Psychology*, 14 (1), 6-23.

<sup>2</sup> Mullen, C. A. (2005). *Mentorship primer*. New York, NY: Peter Lang Publ.

<sup>3</sup> Golde, C. M., Walker, G. E. & Associates (2006). *Envisioning the future of doctoral education: Preparing stewards of the discipline*. San Francisco, CA: Jossey-Bass.

**SECTION A: RESOURCE OR PROGRAM:**

Random 3-digit code:

Following is a list of resources and programs that some campuses have for doctoral students.

A1. For each resource or program listed below, tell us if it is available to doctoral students like you. *Circle the number in the first column that best applies.*

A2. IF IT IS AVAILABLE, have you used that resource or participated in that program? Circle the number in the second column that best applies. If it is not available or don't know, leave A2 blank.

A3. IF IT IS AVAILABLE, do faculty in your program encourage students to use the resource or participate in the program? Circle the number in the third column that best applies. If it is not available or you don't know, leave A3 blank.

	A1			A2		A3			
	AVAILABLE			I USED		ENCOURAGED			
Resource or program:	No	Don't know	Yes	No	Yes	Discouraged	Neutral	Encouraged	Don't Remember
a. An orientation for new graduate students in the program.	1	2	3	1	2	1	2	3	4
b. A university-wide orientation for graduate students.	1	2	3	1	2	1	2	3	4
c. A graduate student handbook for the program.	1	2	3	1	2	1	2	3	4
d. A graduate student handbook for the University.	1	2	3	1	2	1	2	3	4
e. A graduate student center (i.e., centre with resources, meeting space)	1	2	3	1	2	1	2	3	4
f. An initial retreat prior to commencement of early courses in the program.	1	2	3	1	2	1	2	3	4
g. Networking information (i.e., a list of thesis topics of students and contact info).	1	2	3	1	2	1	2	3	4
h. Time set aside in the program outline for students to connect and interact informally.	1	2	3	1	2	1	2	3	4

	A1			A2		A3			
	AVAILABLE			I USED		ENCOURAGED			
Resource or Program:	No	Don't know	Yes	No	Yes	Discouraged	Neutral	Encouraged	Don't Know
i. Graduate Newsletter (highlighting events, scholarship and conference news, congratulatory announcements, general student news)	1	2	3	1	2	1	2	3	4
j. Seminar programs (recent grads address the topics of organizing and writing research).	1	2	3	1	2	1	2	3	4

## SECTION B: A SENSE OF COMMUNITY

Please indicate the extent to which you agree with each statement as it applies to your experience while pursuing a doctoral degree.

	Strongly Disagree	Disagree	Agree	Strongly Agree
a. Students and faculty care about each other.	1	2	3	4
b. Graduate students are treated with respect.	1	2	3	4
c. Faculty are accessible to graduate students.	1	2	3	4
d. There is a sense of belonging to a department.	1	2	3	4
e. There is a feeling of connection among students.	1	2	3	4
f. There is a "sense of community" in our program.	1	2	3	4
g. Students participate in reciprocal learning.	1	2	3	4
h. Students and faculty collaborate on publications.	1	2	3	4
i. Faculty make sure that students feel like members of the department.	1	2	3	4
j. Graduate students are given an active role in departmental decisions that affect them.	1	2	3	4
k. There is a sense of solidarity among the students who enter the program at the same time.	1	2	3	4
l. Graduate students learn about different professional careers through the diversity of students in the program.	1	2	3	4

**SECTION C: BACKGROUND INFORMATION:****Help us to know a little more about you.**

C1. When did you begin your doctoral program?

Month \_\_\_\_\_ 20 \_\_\_\_\_

C2. What pattern of enrollment best describes your studies?

\_\_\_\_\_ Part time

\_\_\_\_\_ Full time

**For each of the following questions, check the selection that best applies to you.**

C3. \_\_\_\_\_ Male \_\_\_\_\_ Female

C4. \_\_\_\_\_ Single \_\_\_\_\_ Married or partnered

C5. \_\_\_\_\_ No children \_\_\_\_\_ Dependent children

C6. At the time I began my doctoral studies, I would have considered myself to be:

\_\_\_\_\_ A traditional student (directly following the completion of your Master's degree)

\_\_\_\_\_ A non-traditional student (not directly following the completion of your Master's degree)

C7. When were you born? Birth year: \_\_\_\_\_

## SECTION D: INFORMAL MENTORING RELATIONSHIPS

**D1: Many students consider mentoring to be an important variable in their academic and career success in graduate school. For each of the following statements, indicate the extent that it DESCRIBES THE BEHAVIOUR of informal peer mentor(s) in your mentoring relationships.**

	Strongly Disagree	Disagree	Agree	Strongly Agree
a. Help to navigate the process of registration.	1	2	3	4
b. Serve as informal advisors for course decisions.	1	2	3	4
c. Provide emotional support when I need it.	1	2	3	4
d. Provide social support.	1	2	3	4
e. Teach me the details of good research practice.	1	2	3	4
f. Provide me with information about ongoing research relevant to my work.	1	2	3	4
g. Teach me survival skills for my discipline.	1	2	3	4
h. Help to clarify expectations of the program.	1	2	3	4
i. Are available to me when I need help with my research.	1	2	3	4
j. Are available to me when I need to talk about my program and my progress in the program.	1	2	3	4
k. Treat my ideas with respect.	1	2	3	4
l. Give me regular and constructive feedback on my research.	1	2	3	4
m. Help me develop professional relationships with others in the field.	1	2	3	4
n. Aid in the development of my critical thinking	1	2	3	4
o. Aid in the development of my independent thinking.	1	2	3	4

	Strongly Disagree	Disagree	Agree	Strongly Agree
p. Aid the development of effective oral communication.	1	2	3	4
q. Share time management strategies.	1	2	3	4
r. Offer support to prevent educational burnout.	1	2	3	4
s. Are sensitive to my needs.	1	2	3	4
t. Advocate for me with others when necessary.	1	2	3	4
u. Assist me in writing presentations and/or publications.	1	2	3	4
v. Take an interest in my personal life.	1	2	3	4
w. Have my best interests at heart.	1	2	3	4
x. Care about me as a whole person – not just as a scholar.	1	2	3	4

**D2: Doctoral students may form numerous informal mentoring relationships over the course of their program. For each of the following statements, indicate the extent to which it best describes your experience:**

	Strongly Disagree	Disagree	Agree	Strongly Agree
a. I had the opportunity early in the program to interact with advanced students.	1	2	3	4
b. Most of my informal mentoring relationships were formed in the first or second year of the program.	1	2	3	4
c. Most of my informal mentoring relationships were formed <u>after</u> the second year of the program.	1	2	3	4
d. I have not had any informal mentoring relationships.	1	2	3	4

	Strongly Disagree	Disagree	Agree	Strongly Agree
e. Most of my informal mentoring relationships were formed throughout my entire educational journey.	1	2	3	4
f. My informal mentors were peers in my cohort.	1	2	3	4
g. Many opportunities were made available early in the program to meet people and develop informal relationships.	1	2	3	4
h. After "midpoint" my informal mentoring relationships already formed continued.	1	2	3	4
i. I have developed informal mentoring relationships with students from other cohorts.	1	2	3	4
j. The quality of my educational experience has been enhanced by informal mentoring relationships.	1	2	3	4
k. I have developed informal mentoring relationships without ever experiencing a "sense of community".	1	2	3	4
l. I consider my informal mentoring relationships to be of high quality.	1	2	3	4
m. Informal mentoring relationships occur naturally for me.	1	2	3	4



**D3: Indicate below the range of number of informal mentoring relationships that you have been or are currently involved in within your doctoral program:**

- ☐ a. none
- ☐ b. 0 – 3
- ☐ c. 4 – 7
- ☐ d. 8 – 11
- ☐ e. 12 – 15
- ☐ f. greater than 15

## SECTION E: DEVELOPMENT AS A STEWARD OF YOUR DISCIPLINE

Stewardship of a discipline has been suggested as the main purpose of doctoral education. Stewards of a discipline develop a certain set of qualities over time. Following is a list of qualities associated with stewardship.

**E1:** For each quality listed below, tell us if you currently perceive that you have developed this quality in your development as a steward.

**E2:** For each quality listed below, tell us if your perception of this quality has changed since you first started your doctoral program.

Quality:	E1			E2		
	MY CURRENT PERCEPTION			CHANGE IN PERCEPTION SINCE I STARTED THE PROGRAM		
	Not at all	Possibly	Definitely	Decreased	Stayed The Same	Increased
a. I feel that I can be entrusted with the vigor, quality and integrity of the discipline.	1	2	3	1	2	3
b. Critically conserve valuable and useful ideas.	1	2	3	1	2	3
c. Concerned with fostering renewal and creativity in the generation of new knowledge.	1	2	3	1	2	3
d. Think to the future and act on behalf of those students yet to come.	1	2	3	1	2	3
e. I self-identify as a steward of my discipline.	1	2	3	1	2	3
f. I feel a purpose in what I am doing that is larger than myself.	1	2	3	1	2	3
g. Realize that a doctoral degree has a moral/ethical component, as well as an educational component.	1	2	3	1	2	3
h. Concerned with the preparation of the next generation of stewards.	1	2	3	1	2	3

**SECTION F : A CHANCE TO SHARE SOME FINAL THOUGHTS**

F1. I would very much like to interview a subset of survey respondents in greater depth. Would you be willing to be interviewed?

\_\_\_\_\_ Yes. Please contact me to discuss an interview.

\_\_\_\_\_ Maybe. I need more information, you may contact me to talk further.

If Yes or Maybe, please tell me how to contact you.

You can reach me at this email address: \_\_\_\_\_

Or this phone number: \_\_\_\_\_

\_\_\_\_\_ No. I am not interested in an interview.

F2. Please use the space below to elaborate on any of your answers, or to share an experience pertaining to “sense of community” and/or informal peer mentoring relationships experienced during your doctoral educational journey.

**Thank you again for your help and thoughtful participation in this research.**



## Appendix E

## Brock University Ethics Board Clearance



**Brock  
University**

Office of Research Services  
Research Ethics Office  
St. Catharines, Ontario, Canada L2S 3A1  
T: 905-688-5550, Ext. 3035/4876 F: 905-688-0748

[www.brocku.ca](http://www.brocku.ca)

DATE: October 13, 2006

FROM: Linda Rose-Krasnor, Chair  
Research Ethics Board (REB)

TO: Anne Elliott, Education  
Gail Higenell

FILE: 06-051 HIGENELL

TITLE: Do you feel connected? An exploration into doctoral students' sense of community and its influence on the formation of informal mentoring relationships

The Brock University Research Ethics Board has reviewed the above research proposal.

**DECISION: Accepted as clarified.**

This project has received ethics clearance for the period of October 13, 2006 to August 1, 2007 subject to full REB ratification at the Research Ethics Board's next scheduled meeting. The clearance period may be extended upon request. ***The study may now proceed.***

Please note that the Research Ethics Board (REB) requires that you adhere to the protocol as last reviewed and cleared by the REB. During the course of research no deviations from, or changes to, the protocol, recruitment, or consent form may be initiated without prior written clearance from the REB. The Board must provide clearance for any modifications before they can be implemented. If you wish to modify your research project, please refer to <http://www.brocku.ca/researchservices/forms> to complete the appropriate form **Revision or Modification to an Ongoing Application.**

Adverse or unexpected events must be reported to the REB as soon as possible with an indication of how these events affect, in the view of the Principal Investigator, the safety of the participants and the continuation of the protocol.

If research participants are in the care of a health facility, at a school, or other institution or community organization, it is the responsibility of the Principal Investigator to ensure that the ethical guidelines and clearance of those facilities or institutions are obtained and filed with the REB prior to the initiation of any research protocols.

The Tri-Council Policy Statement requires that ongoing research be monitored. A Final Report is required for all projects upon completion of the project. Researchers with projects lasting more than one year are required to submit a Continuing Review Report annually. The Office of Research Services will contact you when this form **Continuing Review/Final Report** is required.

Please quote your REB file number on all future correspondence.

LRK/bb